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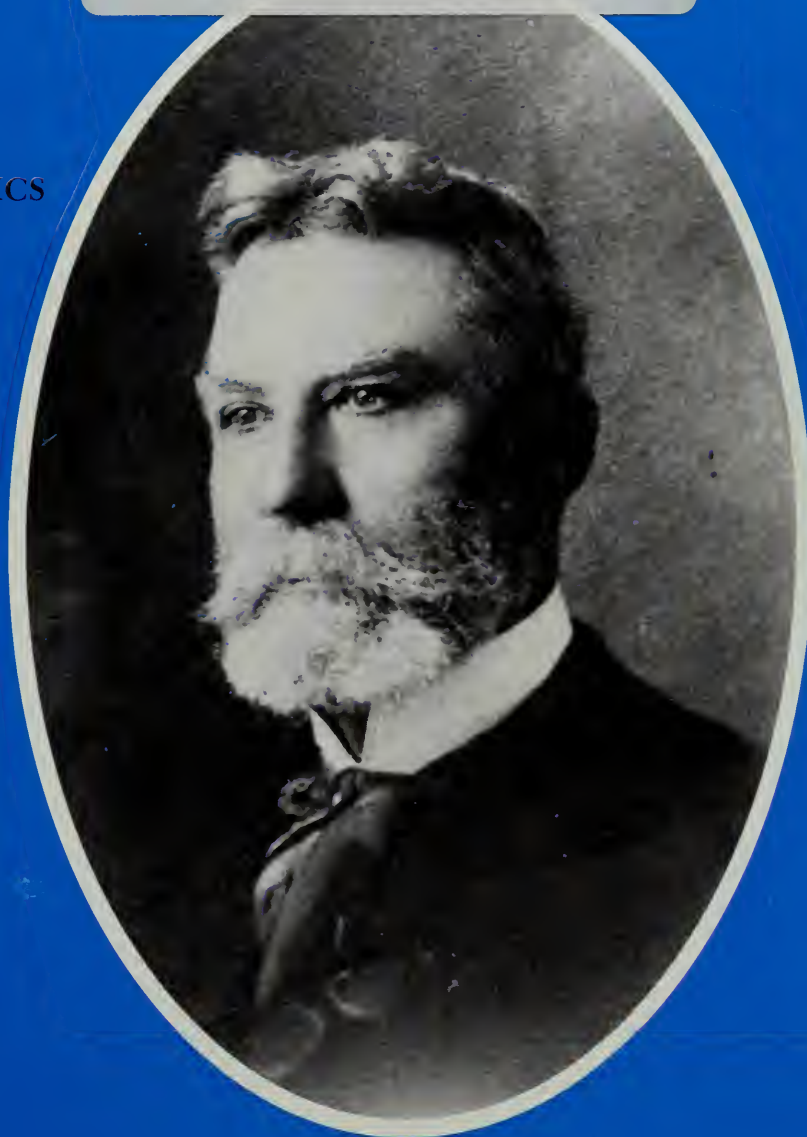
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MUSHROOM POISONING
IN SOUTH CAROLINA

CIVIL COMMITMENT IN
SOUTH CAROLINA

RISE OF ORGANIZED PEDIATRICS
IN SOUTH CAROLINA



VOLUME 84
NUMBER 1
JANUARY 1988

PAGES 1-50



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President's Page



HAZARDOUS WASTE REPRESENTS A TRUE HEALTH HAZARD!

Your House of Delegates, at the Annual Meeting in 1985, passed Resolution Number C-7 from the Sumter County Medical Society. That resolution has been reaffirmed on two occasions. It states:

RESOLVED, that we are opposed to the dumping of toxic wastes from other states into the State of South Carolina and in particular, we are opposed to the further operation of the toxic waste dump at Pinewood, South Carolina.

I would guess that most delegates voting knew little about the hazardous waste industry in South Carolina, let alone the controversy surrounding it. I know that I was uninformed.

Our colleagues from Sumter presented a resolution and our delegates acted on it. When the House of Delegates passes a resolution or makes a recommendation, it is then the responsibility of the Board of Trustees and the officers of the SCMA to act on that recommendation.

Currently, Resolution C-7 has been given a level C priority, which means the SCMA supports the resolution, but at a low priority and is not actively seeking action by the General Assembly. This does not in any way mean the SCMA is not aware of the problem at the GSX Lake Marion (Pinewood) landfill, and other hazardous waste sites in South Carolina. There is a report that states, *by today's standards*, the landfill on the banks of Lake Marion would not be allowed to open. If that is true, it does create a question which must be answered. Why should continued dumping be allowed at the Lake Marion (Pinewood) landfill?

Few, including the Sumter County Medical Society or Senator Leventis, expect the landfill to close tomorrow. What they do want and should expect now is meaningful, productive and credible discussion and policy regarding hazardous waste in South Carolina that would address the Lake Marion (Pinewood) facility.

The DHEC Hazardous Waste Task Force has been meeting regularly now for about six months, six times as a full committee but many times as subcommittees. As an appointed member, I have had the pleasure of serving on that Task Force. Today (December 11), we met all day and had reports of all the subcommittees. They are (1) Risk Assessment; (2) Technology Alternatives; (3) Siting Criteria; (4) Education; (5) Future Needs; (6) Waste Reduction; (7) Transportation; and (8) Financial Responsibility.

The Task Force is very diversified in its representation (CASE to GSX). The task has not been simple, as you can imagine from the titles of the subcommittees, and to date, general consensus is not set but does appear to be forming. It seems that meaningful and forceful policy recommendations will be made to DHEC by the March deadline. That will be the point the SCMA will be called upon to readdress the issue. DHEC staffing and funding by the General Assembly are immediate priorities.

Hazardous waste is a true health hazard and because of that, we, as physicians, must be concerned. Because of our concern, we must become knowledgeable, and as public (patient) advocates we must work towards providing a safe environment for all of us.

A handwritten signature in dark ink, appearing to read "Charles R. Duncan, Jr., M.D." with a stylized flourish at the end.

—CHARLES R. DUNCAN, JR., M.D.
President



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President's Page



1988 LEGISLATIVE ISSUES

The second session of the 107th General Assembly convened on January 12, and as your President, I had the pleasure of serving as the Doctor of the Day. It was exciting to be a part of the opening day of this session and, as I spoke to many of the members of the General Assembly, to know that your organization, the SCMA, is a viable and strong force at the State House. The efforts of your officers and staff, member physicians, and the Auxiliary over the years have resulted in most members of the General Assembly coming to realize we are an organization committed to the legislative process and committed to conducting our legislative activities in a manner fitting the profession we represent. You can be proud of the esteem in which the SCMA is held.

This session will be a busy one for the SCMA and this will always be the case because of our commitment to represent all the people of this state, our patients, and the physicians who practice medicine in South Carolina. (Yes, even those who choose not to belong to the SCMA.)

There are many pieces of legislation which are of interest to us as we continue to be the champion for the quality and availability of health care for all people and continue to support freedom of choice in the health field. The bills vary a great deal in their impact on health care and in our response to them.

Tort reform is, of course, one of our major concerns and currently, in concert with the South Carolina Civil Justice Coalition, we are attempting to obtain meaningful tort reform through the Senate Judiciary Committee. The Lieutenant Governor, in his opening remarks to the General Assembly, mentioned tort reform first in his list of concerns that the General Assembly must address and deal with in this session. Licensure tied to mandatory assignment for Medicare patients is another bill that we are concerned with and are actively working on at the committee level. Another bill of interest is one which would mandate that all insurance forms be filled out in the physician's office prior to billing the patient, and this is also being addressed at the committee level. Some other issues are expansion of the certificate of need; disposal of hospital and in the future office waste which may be infectious in nature; generic substitution bills; comprehensive health education; and AIDS legislative issues, just to mention a few.

It is important that we maintain a strong and active presence in the General Assembly and your staff and officers are doing just that. It is equally important that each of you maintain contact with your representatives and senators, and I urge your participation in the legislative process.

Be aware of the issues and communicate your concerns to your representatives and senators. Your officers and staff at the SCMA stand ready to help you in any way, and remember that the "Legislative Update" provides good resource material and addresses the key issues.

The success of your organization, the SCMA, depends on each of you and your willingness to stand up and be counted. Be aware, be knowledgeable, be active and encourage your colleagues who are not active and do not belong to the SCMA, AMA and SOCPAC to join.

Your patients, your organization, need your commitment, your pledge to make the SCMA an even stronger advocate for the concerns of public health in South Carolina.

A handwritten signature in dark ink, reading "CR Duncan Jr. MD". The signature is fluid and cursive.

—CHARLES R. DUNCAN, JR., M.D.
President



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President's Page



A JOINT EFFORT: PUBLIC AND PRIVATE SECTOR SUCCESS

I recently had the pleasure of attending the DHEC Board meeting in January when the report of the Legislative Subcommittee of the DHEC Task Force on AIDS was adopted as DHEC policy. It was a privilege to be there and to see the Board act in such a responsible manner in support of this comprehensive and well-researched summary of legislation needed in South Carolina.

Clearly, there are numerous issues evolving from the AIDS epidemic that physicians have never before faced. Only through research, much thought and debate can we act responsibly in educating, treating and protecting seropositive patients and AIDS patients.

In light of the magnitude of this tragic disease we now know as AIDS, it is encouraging that South Carolina appears to be in the forefront in efforts to deal with the disease. Numerous healthcare organizations, such as SCMA, DHEC, SCHA, as well as other state agencies and private organizations and individuals, have banded together early in the epidemic for the sole purpose of protecting South Carolinians through education, medical care, surveillance and contact tracing.

Unfortunately, South Carolina has not received sufficient funding in the past to put an aggressive contact tracing program in place. With the support and encouragement of the SCMA, DHEC is currently requesting funding from the state to support this part of their AIDS initiative.

After months of studying moral, legal, ethical, financial and educational aspects of AIDS, the Ad Hoc Legislative Panel on AIDS recently released its report on AIDS and state policy. As Senator Nell Smith, Chairman of the Panel, concluded:

The people of our state are now faced with tough choices that strike at the core of our goodness and understanding, our fears and our hopes, our best and our worst as citizens of this state.

AIDS is a fatal disease, and the threat of AIDS—even the rumor of its presence—has changed the way people approach life and love, sexuality and human relations, our rights to privacy, and our rights to be protected from things which can do us harm.

... Regardless of anything else we do, education is still the key. We must deal in sound medical knowledge and dispel the myths that surround the disease.

Clearly, the collaborative efforts of public and private institutions can and do make a difference. Let us continue our collaborations in efforts to combat one of the most dreadful health issues of all times.

A handwritten signature in dark ink, reading "Charles R. Duncan, Jr., M.D." in a cursive style.

—CHARLES R. DUNCAN, JR., M.D.
President



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President's Page



THE GIFT IS TRUST: HANDLE IT WITH CARE

I want to thank each of you for the honor of serving as your president this past year. It is an honor made evident by the reception I have received in every instance, even those few adversarial encounters.

Our SCMA and the AMA are held in high esteem on many fronts, and we physicians can be pleased about that. What we cannot be pleased about is the fact that there are many fronts where we could do better as physicians and as organized medicine. We must face up to this fact and do something about it.

It has been my impression that organized medicine has done a good job representing physicians' interests in a somewhat difficult environment. We have not always been as successful as we would like, but in general, we have done well.

What concerns me most, however, is that the public does not perceive us as doing our best in representing them. In fact, much of the public feels we do not represent them at all.

I do not care to get into the argument that most of organized medicine's efforts are not only of medical interest but are also issues dealing with patient interest. That may be true, depending on the issue and/or the bias of the one making the decision. When the public makes that decision, it is clear what their perception is.

The fact is we do not spend much time or effort on behalf of our patients. They do not perceive that we have accepted our responsibility to be their representatives in health-related matters.

There are physicians who are strong patient advocates, a few visibly so, but there are many who remain silent. Unhappily, it is apparent that there is a more visible body of individuals who have their own interests at heart. I call them "individuals" and not physicians for an obvious reason.

I feel strongly that we as physicians and the organizations that represent us must accept the moral-ethical responsibility the tradition of medicine demands. We must care for the trust given us by our patients. That trust is a gift.

Each of you knows what needs to be done, and each of you has within you the ability to effect the changes that would let the public know we have placed their interests first.

Our organizations, the SCMA and AMA, will continue to represent physicians in the public interest. The most visible area or example today is in our legislative efforts. There are many legislative initiatives with which we deal, most in opposition. As we react to the initiatives and similar confrontations, we, as caretakers of public health issues, must realize that there is another side to every issue.

We must ask the questions: "What have we done or not done that suggests to our legislators and their constituents that these initiatives are needed? What have we done or left undone that would cause public confidence in medicine to fade?"

Ask those questions of yourselves and your colleagues. When you reach some conclusions then ask the next question, "What are we going to do about it?"

Most of what you just read I have already written on this page before or said to many of you as I visited our component societies across the state. I feel good about what the SCMA and its members are doing. I also feel strongly that there is so much more we could be doing. Support our officers, our staff, and especially Tommy Rowland, our new president. Encourage non-member colleagues to join forces with us and help to make an already strong and effective organization even better and more representative.

The future of medicine is in the hands of many forces, and how the profession of medicine fares will depend on how we handle these forces. The most important force is the trust of the public we serve. Handle it with care.

A handwritten signature in dark ink, reading "Charles R. Duncan, Jr., M.D." in a cursive style.

—CHARLES R. DUNCAN, JR., M.D.
President



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President's Page



PRESIDENTIAL PRIORITIES

It is with great pride and much humility that I assume the presidency of the South Carolina Medical Association. To be elected a leader by one's professional peers is an honor that cannot be excelled. I assume this responsibility with great apprehension of my ability to perform as well as my predecessors. I pledge my sincerest effort to do a good job for the membership and for the profession.

Charlie Duncan is to be congratulated and commended for a job very well done during his year as president. We have been well represented in all quarters. I am sure that Charlie has worn ruts in I-26 between Greenville and Columbia during the last year. His idea of a study in medical ethics has proved both timely and productive. His ethics committee was well planned, its members very well selected, and its product outstanding. A hearty "well done" for Charlie. We must also thank Pat for her patience and understanding while sharing Charlie with us this past year.

For those of you who were unable to attend our annual meeting, I am afraid you suffered a real loss. I felt, as many of you also felt, that a meeting theme of medical ethics would be very dry. I have never been more mistaken! Dr. Mark Seigler of Chicago, Dr. Don Saunders of USC School of Medicine, Dr. Nora Bell of USC, Dept. of Philosophy, and Dr. Bob Sade of MUSC generated much interest and debate with practicing clinicians on such timely subjects as euthanasia, AIDS, brain death, and organ donations. It was very obvious to everyone that medical ethics should and do affect our decisions in many areas of our daily practice.

The meeting was well organized and managed by our SCMA staff. Dr. O'Neill Barrett put together an outstanding program of CME and is to be commended for doing a fine job as program chairman. I did not hear of a single "hitch" during the entire meeting. The hotel accommodated us well and even the weather was perfect.

Briefly, my priorities for the year were listed as:

- (1) Continuing effort to resolve the malpractice problem with a continued interest in risk management and support.
- (2) Improving and expanding our "personal care" program in an effort to deal positively with the ongoing Medicare problems.
- (3) Resolution of our dissatisfaction with the PRO.
- (4) Improvement of our Medicaid situation with proactive involvement in their developing programs.
- (5) Continued effort to contain the ongoing turf battles.
- (6) Support of our membership in dealing with third party insurers and contractors.
- (7) Continued effort to manage the AIDS plague.
- (8) A continuing effort to recruit new members. Nothing would make us stronger than to have all physicians members of SCMA.

One can readily see that there is much to be done. I look forward to serving you and to making a contribution to our profession. My door is open to your suggestions and complaints. I will need your help.

I thank you very much for the greatest honor of my life!

Sincerely,

A handwritten signature in cursive script, reading "Tommy".

THOMAS C. ROWLAND, JR., M.D.
President



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President's Page



TEENAGE PREGNANCY IN SOUTH CAROLINA

Being a practicing obstetrician, I am particularly happy that the South Carolina Medical Association is attacking the teenage pregnancy problem with the dedication of this month's *Journal* to this tremendous socioeconomic tragedy.

The United States has the sixth highest rate of teen births among 37 developed nations. We are led only by Hungary, Romania, Puerto Rico, Cuba and Bulgaria, as reported by the Alan Guttmacher Institute. This report also states that although teenagers represent only 18% of sexually active women, they account for 35% of all out-of-wedlock births and 27% of all abortions. These statistics certainly do not support a status quo attitude by the parents and educators of our teenagers.

To bring this problem a little closer to our hearts and our pocketbooks, we must realize just how much of a problem we have in South Carolina. In 1986, teenage mothers (age 14-17 yrs) delivered 3,351 live born babies. Of this total, more than two-thirds (2,424) were born out of wedlock. The cost of these pregnancies delivered of mothers under 20 years of age in South Carolina in 1984 was \$7,631 per pregnancy or a total of \$26.5 million from our Medicaid coffers. This was the cost for hospital and physician care of the mother and newborn.

The socioeconomic costs of teenage pregnancy to our society other than that of actually providing medical care to the mother and newborn are even greater.

Teenage pregnancy is a major cause of high school dropouts and 80% of these girls never return to school. Many fathers of teenage pregnancies drop out of school to marry or otherwise try to help provide for their pregnant girlfriends. Many of these high school drop-outs never complete enough education to become more than minimal wage earners and, therefore, with their offspring perpetuate the poverty and welfare population. The saddest statistic of all is that of all teenage pregnancies, 25% will be pregnant again within one year.

About 95% of teenagers keep their babies with or without a husband, and of the one-third of teenage marriages, probably about half end in divorce. Thirty-five percent of all divorces occur to women who were married in their teens. Fifty percent of Aid to Families with Dependent Children (AFDC) goes to households headed by women who became mothers before the age of 20.

We do have a problem! ! Fortunately, South Carolina has taken a leadership position among the states in developing a solution to this overwhelming problem. The recently passed Comprehensive Health Education Act mandates health education to all school children K-12 and mandates reproductive health education above the ninth grade. There is no question that education is the key to the solution of this problem. From the debate, both formal and informal, that I heard as this bill progressed through our legislature, I truly believe that not only do our teenagers need education, but many of their parents as well. Parents who feel they must protect their innocent children from the graphics of sex education must realize that most teenagers already know what it is all about. Even in an urban OB-GYN practice, I would estimate that at least 50% of teenage girls are sexually active before they finish high school. Most of them know and understand very little of their own reproductive systems. They need education not only about contraception but about the long term results of their activity. If it must be graphic, so be it! !

Of course, we must not forget about the care of the teenager herself. She needs care with understanding. She needs to be helped to know that she is O.K. and to maintain her self-esteem with her peers, both teenage and adult. She needs parental care, concern, and love. She must be helped back into our system as an educable and potentially productive citizen.

Our membership will have a great deal of influence in the solution of this problem.

Sincerely,

A stylized, handwritten signature in dark ink, appearing to read 'Tommy'.

THOMAS C. ROWLAND, JR., M.D.
President

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President's Page



PHYSICIANS AS INSURANCE ADMINISTRATORS

Exactly one week after my inauguration as your 125th President, I had the pleasure of attending the North Carolina Medical Society Annual Meeting in Pinehurst. The weekend was very reminiscent of our meeting the week before. Pinehurst was beautiful although I did not have an opportunity to try my skill (or luck) on the Pinehurst Links. It was very interesting to attend the North Carolina Medical Society House of Delegates meeting and hear many of the same issues discussed again.

You will remember from my inaugural address that I discussed two relatively new roles of physicians—those of tortfeasor and provider, roles which we would as soon not have to perform. Another role which I did not discuss is that of insurance administrators. We are all overburdened with the responsibilities of our patients' insurance requirements. Our patients are not adequately informed of their insurance companies' requirements for pre-admission certification, second opinions, allowed lengths of stay, etc. We have all had denial of payment by third party payors (other than the state and federal governments) because these requirements have not been met. We have all also suffered the inconvenience of busy telephones, delayed responses and interruptions of our daily routine by third parties with whom we are trying to fulfill these requirements as a service to our patients. We frequently keep a clerical employee in our offices occupied full time attempting to satisfy these requirements. When scheduling patients for surgery or hospital admission, it has become our responsibility to determine and fulfill the requirements of each individual insurance company for the patient.

As you may know, there was a bill before the legislature this year that would not allow us to send statements to patients until all insurance claims had been filed. This bill carried a substantial fine if a statement was sent before all claims were made. Fortunately, this bill is not yet out of committee. I contend that it is the patient's responsibility to know and understand the provisions and requirements of his own insurance program. It is certainly the patients' responsibility to know how many insurance policies they have and to make the claims available to us for completion. I do feel that it is our responsibility to complete appropriate claim forms.

These administrative chores are not part of medical care and should be handled and compensated separately. I contend that we should seek legislative relief from these administrative duties or at least to require compensation for our time. It should be the responsibility of the patient and the insurance carrier to work out these requirements for any given procedure or admission. It would also be very reasonable to require insurance companies to standardize the forms necessary for precertification, second opinions and allowed hospital stays.

I wish for you all a pleasant and safe summer.

A handwritten signature in cursive script, reading "Tommy".

THOMAS C. ROWLAND, JR., M.D.
President



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President's Page



THE PROPOSED REGISTERED CARE TECHNOLOGIST

One of the most critical problems facing practitioners of medicine in the United States today is the shortage of bedside nurses. This problem has received national publicity by the controversial solution offered by the AMA at the annual meeting in Chicago in June of this year.

There is no question about the critical shortage of clinical nurses in the United States. Eighty percent of the nation's hospitals report a shortage of nurses. This shortage extends to our own local hospitals. In one hospital in the Piedmont area clinical nurses have been imported from the Philippines on a rotation basis. In Columbia, a major medical center is offering a bonus to new nurse employees and a bounty to the person who recruits new nurse employees. Hospitals are actually trying to out-bid each other with salary and perks to attract new nursing graduates.

Why does this shortage of nurses exist? For the past decade organized nursing leadership and nursing academia have been trying "to upgrade their profession." The trend has been to require baccalaureate degrees, graduate and doctorate degrees, and to develop independent nurse practitioners as well as executive nurses. There has been very little emphasis in nursing education for bedside clinical care. The trend has been to close three-year diploma nursing programs and to do away with LPNs and even surgical technicians. Two year technical school nurses are frowned upon by nursing academia even though in South Carolina a higher percentage of two year graduates pass the state nursing board exam than graduates of the University school of nursing.

There are a great many young women finishing high school who would like a two or three year program in nursing to provide them a professional position on the health care team. They could have a job before marriage, between children, and after their children leave the nest. Most of our best clinical nurses are interested in patient care and really do not aspire to run the show. Most of the nurses with whom we work day to day do not aspire to be independent practitioners or executives. They are happy with a job which they can leave after their shift to resume their primary career of being wives and mothers.

At a time when the American Nurses Association is advocating advanced degrees and independent nurse practitioners, the AMA has proposed relief of the problem by training registered care technologists (RCTs). Since Dr. Davis' announcement of this program, I have been bombarded by nurses in leadership positions asking, "Would you want your critically ill patient cared for by RCTs?" etc. The plan does not propose that we care for the critically ill with RCTs. The AMA proposal is to provide on job training for qualified high school graduates to relieve the nursing shortage by feeding, bathing, ambulating and providing other basic hands-on services. The RCT program is designed to help and relieve the nurse—not to replace her.

Organized nursing and nursing academia must realize that the physicians need them and want them. The AMA has always supported the ANA in all of its proposals to relieve the nursing shortage through increased and improved education. In fact, a group of physicians in Columbia is currently lobbying for funds to increase the number of students in the Midlands Tech class to accommodate a waiting list. The SCMA has recently endorsed and supported state funding through the Commission on Higher Education for the nurse recruitment and retention center. Organized medicine will continue to support the nursing profession.

There has been an error in the direction of nursing education. There is a definite need for doctorates in nursing and masters in nursing in academic and supervising positions, but there is a much greater need for honest to goodness, real bedside nurses to help us care for the sick. The RCT program is a pilot study that may never come to fruition, but it has certainly gotten everyone's attention—maybe nursing educators and nursing leadership simply needed a 2x4!

A handwritten signature in cursive script, reading "Tommy".

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President's Page



A PRO IS A PRO IS A PRO?

As I write this article in September, 1988, bids have been submitted to the Health Care Financing Administration (HCFA) for the contract for Peer Review Organization (PRO) activities in South Carolina for the next two or three years. Since this has been one of the most controversial issues the South Carolina medical community has faced, it seems appropriate to review the controversy for the membership.

In October, 1984, a controversy developed between HCFA and the South Carolina Medical Care Foundation (SCMCF). HCFA added required review activity that had not been a part of the original contract and withheld payment of some \$300,000. This controversy ultimately ended in termination of the SCMCF contract with HCFA. There was essentially no PRO activity in South Carolina until July, 1986, when a new contract was to be awarded.

In the spring of 1986, after much discussion among the boards of SCMA and SCMCF, the decision was made for SCMCF to submit a bid for the new contract. This decision was made because everyone felt that South Carolina physicians should be reviewed by a South Carolina organization staffed with South Carolina people and South Carolina physician reviewers. At this time we learned that Metrolina Review of Charlotte, N.C., was also submitting a bid for the South Carolina PRO contract.

The contract was awarded to Metrolina. Except for a few meetings with the South Carolina Hospital Association's Liaison Committee, of which the President of SCMCF was a member, there was no communication between Metrolina and organized medicine in South Carolina during their implementation of review. SCMA was unable to determine the names of physician reviewers or even membership of Metrolina's Board of Directors for many months. Meanwhile, Metrolina implemented the review process with almost vengeful aggressiveness. The denial rate in South Carolina was about 6.5 percent when the national average was 1.2 percent. At least 50 percent of their denials were eventually reversed. South Carolina physicians became very disgruntled and unhappy with the review process and with the tremendous communication gap that persisted.

On March 27, 1988, HCFA wrote Metrolina a long letter explaining why Metrolina's performance evaluation for 20 months' work indicated that they had not satisfactorily performed as a PRO in South Carolina. The SCMA and the S. C. Congressional Delegation have been flooded with complaints from constituents, both physicians and patients. There has been no physician support of Metrolina from physicians in South Carolina except a few who are employed by Metrolina.

At this writing, bids have been submitted by Metrolina and Medical Review of North Carolina (MRNC) for the new PRO contract in South Carolina which commences in October, 1988. The leadership of MRNC has had advance meetings with leadership of SCMA and SCMCF. They will staff an office in Columbia, will have South Carolina physicians on their governing board and will have a South Carolina physician as Medical Director. They have come forward in advance to try to work with us and not as our adversaries.

SCMA leadership and over 2,000 South Carolina physicians have expressed support for MRNC to have the contract. We all agree that review is an onerous process, but we also understand that some process of review is necessary.

When you read this page we will know who has won the contract. Regardless of who the South Carolina PRO is, we all hope that there will be a tremendous improvement in communication throughout the process.

Sincerely,

A handwritten signature in cursive script, reading "Tommy", written in dark ink.

THOMAS C. ROWLAND, JR., M.D.
President

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President's Page



ELIMINATE FREeloadERS

You will realize as you read, as I did while writing, that I am "preaching to the choir." Still I am motivated to ventilate a bit about membership in the S.C. Medical Association.

In September, 1988, there were 5,203 licensed physicians in South Carolina. The total membership of SCMA was 3,129 and, of these, 280 are honorary members. These statistics indicate that if we exclude honorary members, residents and medical students we have 2,758 active dues paying members. Fifty-three percent of the physicians in South Carolina are paying the way for the profession at the state level. A few more than half the SCMA members are also members of AMA. Our Political Action Committees, SOCPAC and AMPAC, are supported by about one-third of the total membership. Total dues to be an active, participating, and supporting member of SCMA, AMA, SOCPAC and AMPAC are around \$700 per year.

I realize that many of us pay dues to specialty societies, travel groups and other organizations that are more educational and clinically oriented. The SCMA and AMA are the profession's voice to government, industry and community.

Doctors' coffee lounge conversations continue to berate the only organizations that represent us as individuals in a group to industry, government and community. Questions such as "Why should I belong?" and "What does SCMA or AMA do for me?" are redundant, and characterize individuals as either too naive to know what is going on or too miserly to care about the well-being of the profession as a whole. These physicians who serve on the faculties of our medical schools who do not see the need to participate should be reminded that the only cap on medical malpractice we have achieved has been on their behalf and was done by the SCMA. We must have strong representation in the business and government forums for our profession to survive as we know it and have enjoyed practicing it. We must arbitrate as a strong unified group to deal with HMOs, insurance companies and government. We are all super-intelligent, egotistical, opinionated individuals with good ideas—we must collect ourselves to win.

As I indicated at the outset, I realize I am preaching to the choir, but I hope that at least a third or 1,000 members of SCMA will read this page.

I challenge each reader to solicit one non-member physician to join us in organized medicine. If we had 100 percent membership, we would have no freeloaders and SCMA would be a very strong voice for our profession. A thousand fewer freeloaders in 1988 would make me thankful this Thanksgiving.

Happy Thanksgiving!!!!

Sincerely,

A stylized, cursive handwritten signature in dark ink, appearing to read 'Tommy'.

THOMAS C. ROWLAND, JR., M.D.
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INFORMATION FOR AUTHORS

Authors should refer to the detailed instructions in the January issue. Manuscripts and other correspondence should be addressed: The Editor, JOURNAL OF THE SOUTH CAROLINA MEDICAL ASSOCIATION, Post Office Box 11188, Columbia, S. C. 29211.

All manuscripts should be accompanied by a transmittal letter with the following paragraph: "This original work has not been submitted or published elsewhere, in entirety or in part. I (we) hereby transfer, assign, or otherwise convey all copyright ownership to the South Carolina Medical Association in the event that this work is published by the SCMA."

We request that manuscripts be concise (no longer than 8 typewritten pages, double-spaced), with no more than ten references. These should be cited in the text in superscript, e.g., "Bottsford, et al.³", and should conform to the following style: "3. Bottsford JE, Bearden RC, Bottsford JG: A ten year community hospital experience with abdominal aorta aneurysms. *J S C Med Assoc* 79: 57-62, 1983." Ordinarily, publication of four small illustrations or tables or the equivalent will be paid for by *The Journal*. Manuscripts should be submitted in duplicate. Reprints will be made available by the publisher.

President's Page



PERSONAL CARE PHYSICIANS

At the 1987 SCMA Annual Meeting, the House of Delegates passed a resolution to implement the Personal Care physician project. The Personal Care program is an innovation of the American Society of Internal Medicine and was originally promoted in South Carolina by the S. C. Society of Internal Medicine. A major purpose of the program is to help the *needy* elderly receive appropriate medical care without financial hardship and with a sense of dignity.

A subsequent resolution passed by our House of Delegates in May, 1988 expanded and enhanced this program which offers three services to the elderly. First, Personal Care physicians and their office staff agree to help educate their Medicare patients. For example, they might explain participating and nonparticipating status, billing for co-payments and deductibles, or actual charges as opposed to allowable charges.

Secondly, Personal Care physicians will help patients file their Medicare claims. This might be accomplished by running the claim form on the office computer and handing it to the patient for submission or by simply giving the patient an itemized statement of charges which would be attached to a claim form for submission to the fiscal intermediary. Older patients are often overwhelmed with Medicare paperwork. Many cannot distinguish between a check and a report of payment. None of our patients and few physicians are familiar with the CPT coding system required for preparation of claims. I understand that in some larger northern cities, there are for profit businesses set up to fill out Medicare claims for patients. Let's leave that practice to the large cities of the north.

Thirdly, for Medicare patients experiencing financial difficulties, Personal Care physicians would agree voluntarily, on a case-by-case basis, to help the needy elderly. A Personal Care physician could arrange for the patient to pay no more than Medicare's approved fee for a particular service either by accepting assignment on a particular case or by discounting his usual charge.

The Board of Trustees identified the needy elderly as 150% of poverty. For a single person this represents income of \$8,250, or \$11,100 for a family of two persons. SCMA staff and I have met with many leaders of organizations of the elderly and worked through the details of this proposal. Effective January 1, 1989, the local Councils on Aging have agreed to identify Medicare beneficiaries who meet this financial requirement (based on a voluntary statement of earnings) and issue them a Personal Care ID card. The patient would then present this card to any Personal Care physician, who is encouraged by the SCMA to accept assignment for this patient. The idea is to maintain dignity for the patient in need and to help the patient in financial stress. Of course, all of this is absolutely voluntary on a case-by-case basis and is an optional supplement to the current program where individual physicians make decisions whether to accept assignment for patients on an individual basis. This program was presented to members of the Joint Legislative Committee on Aging where it was very well received as a positive step by our profession to help the needy.

To date there are about 850 of our members enrolled. You will receive descriptive literature shortly, further explaining the details of the program and how you may enroll. We need 100% involvement of non-participating physicians in order to make a positive impact on consumers, media and the General Assembly.

Blue Cross, the fiscal intermediary for Medicare in S. C., indicates that 74% of all Part B claims are being billed as assigned. Of course the participating physicians are already doing their share and are unaffected by this program. I am probably not asking most of our members for more than they are already doing. Forget your harassment by the bureaucracy and join the Personal Care physicians program. It will be good for you, your patient and SCMA. We deserve some good P.R.!!

Merry Christmas,

A stylized, cursive handwritten signature in dark ink, appearing to read 'Tommy'.

THOMAS C. ROWLAND, JR., M.D., *President*



MUSHROOM POISONING IN SOUTH CAROLINA*

TERRANCE P. McHUGH, M.D.**

NATHANIEL J. STEWART, JR., M.D.

INTRODUCTION

Although an estimated 5,000 species of wild mushroom grow throughout the United States, only 50 to 100 of these species contain toxins and probably less than a dozen are deadly.¹⁻³ Because mushroom poisoning is not a reportable illness, its national incidence is difficult to establish. The South Carolina Palmetto Poison Control Center received 485 calls concerning mushroom ingestions from 1982 through 1985; undoubtedly, many more unreported cases were treated in private offices or emergency departments. Adults who mistake toxic mushrooms for edible or hallucinogenic species are at risk, as are small children, who account for up to 70 percent of some series.^{3, 4} In general, the mortality rate is higher in children than adults.⁵

CASE REPORTS

The hospital records of seven patients admitted for mushroom poisoning were obtained from Richland Memorial Hospital, McLeod General Hospital, Spartanburg General Hospital and the Greenville Hospital System. These cases were examined for the patient's age and sex, the time interval from the mushroom's ingestion to the onset of symptoms, the mushroom's identification (if possible), signs and symptoms, length of hospi-

tal stay, and the month of the year. The results are seen in Table 1.

Case #1:

A 71-year-old female, who had no history of significant medical problems and was on no medications, ate a mushroom she had found in a pasture. Approximately 18 hours later, she developed nausea, vomiting and abdominal pains. These symptoms progressed over 48 hours to include lethargy and confusion; approximately 72 hours subsequent to ingestion, she was admitted to a rural hospital with hypoglycemia (30 mg/dL). Her mental status did not improve following a bolus of 50 ml of a 50 percent dextrose solution. Initial laboratory studies showed evidence of hepatic failure with a bilirubin of 2.8 mg/dL, a SGOT of 5,270 IU/L, and a LDH of 3,530 IU/L. The patient was promptly transferred to a regional hospital center.

On arrival at the receiving facility, the patient responded only to painful stimuli. She was afebrile, was not hypotensive, and did not appear dehydrated. Rectal exam revealed heme positive stool. Laboratory results at this time included the following: hemoglobin, 13.3 gm/dL; white blood cell count, 19,600/mm³ with a left shift; sodium, 136 mEq/L; potassium, 4.7 mEq/L; chloride, 98 mEq/L; glucose, 34 mg/dL; BUN mg/dL, 44; creatinine, 4.1 mg/dL; serum bicarbonate, 12 mEq/dL; arterial pH, 7.15, pCO₂, 30 mmHg, pO₂, 124 mmHg; partial thromboplastin time, 63 seconds; and protime, 83 seconds.

The patient was treated with intravenous fluids

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** Address correspondence to Dr. McHugh at the Department of Emergency Medicine, 5 Richland Medical Park, Columbia, S. C. 29203.

Table 1. Mushroom Poisoned Patients

#	Age	Sex	Onset (Hrs)	Mushroom	Symptoms	Length of Stay	Month of Year
1	71	F	18	Probable Amanita	Initial vomiting, abdominal pain, Liver failure, coma, death	4 [†]	November
2	33	M	2	Coprinus/Clitocybe	Hx of drug abuse, Muscarinic symptoms	2	August
3	26	M	3-4	Unidentified	Vomiting, diarrhea, weak, clammy Hypotension (90/60)	2	September
4	22	M	3-4	Unidentified	Hx of drug abuse Acute psychosis after "mushroom tea"	6	September
5	58	F	3.5	Unidentified	Vomiting, diarrhea, weak, clammy Hypotension (96/50)	2	August
6	30	F	4	Unidentified	Vomiting, no diarrhea	1	August
7	20	M	2-3	Unidentified	Hx of drug abuse Vomiting, diarrhea, cramps, somnolent	2	August
† Died							

containing supplemental glucose and sodium bicarbonate to counteract her hypoglycemia and metabolic acidosis; she also received fresh frozen plasma. The patient remained lethargic and her hepatic and renal status progressively worsened (creatinine reaching 4.1 mg/dL; SGOT 12,218 IU/L; and SGPT 8,159 IU/L). Blood and urine cultures remained negative as did a hepatitis screening profile. Chest radiograms and CT scans of the head and abdomen were unremarkable. The patient's electrocardiogram showed increasing ischemia and she died on the sixth day post ingestion.

Cases #2-7:

The ages of these patients ranged from 20 to 58 years of age; this group included four males and two females. All cases occurred during the months of August and September. Most patients presented within two to four hours of ingestion and complained of nausea, vomiting and diarrhea. Three of the patients had a history of drug abuse, one of whom became psychotic after drinking a "mushroom tea." None of these patients developed clinical or laboratory evidence of hepatic toxicity and there were no deaths within this group. The

average hospital stay of three days consisted of intravenous fluids, supportive care and observation.

DISCUSSION

Mushrooms are not plants but rather the fruiting body of fungi.⁶ Unlike plants, fungi do not contain chlorophyll and must actively obtain certain essential nutrients for growth, usually by feeding on dead or decaying matter. Fungi reproduce both sexually and asexually.⁶ Living mostly in a mycelial state, they grow and reproduce by binary fission; however, when conditions become favorable, they unite sexually and produce spore containing mushrooms.⁶

Unfortunately, no accurate field test can detect whether a given mushroom is poisonous. Because eating a single 5 gm cap of *Amanita phalloides* can be fatal,^{4, 7} there is one golden rule in mushroom hunting—"if you don't know for certain what it is, don't eat it." Each mushroom must be positively identified; old myths, such as poisonous mushrooms tarnish silver spoons or turn rice water red, are just that—myths. Likewise, believing that proper cooking eliminates toxins or that animal

MUSHROOM POISONING

nibble marks found on a mushroom indicate it is edible will result in potentially fatal ingestions.^{1, 5, 6}

The correct identification of any mushroom can prove difficult; even expert mycologists have difficulty in properly identifying certain species. Mushrooms are usually categorized by the morphological appearance of their cap, stem, gills, base, and spores, as well as the location of their growth and the season of the year.^{1, 6} Spore prints are often necessary to correctly identify a particular species.⁵ Because mushroom color varies by season, geographic location, and the individual maturity of a given specimen, it is not a reliable factor in identification.^{1, 4, 5} Most poisonous mushrooms have names reflecting their toxicity (Death angel, Death cap, Destroying angel).

Toxic mushrooms are placed into one of seven categories depending on their major toxin or mode of action (see Table 2).^{3-5, 8} Clinically, ingestions associated with a delayed onset of symptoms have the worst prognosis. Conversely, mushrooms causing symptoms within a short time of ingestion tend to have a benign course.¹⁻⁸

Mushrooms found in Group I are responsible for up to 95 percent of all fatal mushroom poisonings; specifically, most fatal cases are secondary to ingestion of *A. phalloides*.^{5, 8} Group I mushrooms contain amatoxins; these are **heat stable** cyclic peptides made up of eight member amino acid rings which causes cellular destruction by inhibiting RNA polymerase II, thereby interfering with the transcription of DNA and RNA.⁷⁻⁸ Hepatic and gastrointestinal cells are especially sensitive to these toxins.⁷ Following an asymptomatic interval lasting eight to 12 hours, Group I mushrooms cause a characteristic three phased poisoning.²⁻⁸ Initially, there is a 24 to 36 hour period of cramping abdominal pain, vomiting and diarrhea which often results in marked dehydration, hypovolemia, and hemoconcentration.⁷ This phase is followed by a period of apparent recovery lasting approximately 24 hours. Laboratory testing done during this phase will demonstrate rising values for BUN, creatinine, and liver transaminases. Following the latent period, hypoglycemia, electrolyte abnormalities, coagulation disorders,

Table 2. Toxic Mushrooms

Group	Toxin	Hrs post Ingestion Onset	Toxicity Site	Symptoms	Mortality	Representative Samples
I	Amatoxin	6 - 24	Hepatic, Renal, GI	Stage 1: Vomiting, diarrhea Stage 2: Latent period Stage 3: Hepatic Failure, coma	50 - 90%	<i>Amanita phalloides</i> , <i>A. verna</i> , <i>A. bisporigera</i> <i>A. virosa</i> , <i>A. ocreata</i> <i>Galerina marginata</i> , <i>Lepiota helveola</i>
II	Ibotenic Acid Muscimol	0.5 - 2	Central Nervous System	Anticholinergic effects; Delirium, hallucinations	Rare	<i>Amanita muscaria</i> , <i>Amanita pantherina</i>
III	Monomethylhydrazine	6 - 24	Hepatic, Renal, GI	Vomiting, diarrhea, abdominal pains, delirium, coma, hemolysis, methemoglobinemia	15 - 40%	<i>Gyromitra esculenta</i>
IV	Muscarine	0.5 - 2	Autonomic Nervous System	Muscarinic effects: SLUDGE Salivation, lacrimation, urination, defecation, emesis	5 - 10%	<i>Clitocybe cernuata</i> , <i>Inocybe fastigata</i> , <i>Boletus satanas</i>
V	Coprine	0.5 - 2 after ETOH	Autonomic Nervous System	Apprehension, flushing, tachycardia, dyspnea, hypotension	Rare	<i>Coprinus atramentarius</i>
VI	Psilocybin	0.25 - 3	Central Nervous System	Hallucinations, euphoria, drowsiness	Rare	<i>Psilocybe cubensis</i> , <i>Conocybe cyanopus</i> , <i>Panaeolus foenisecii</i> , <i>Gymnopilus aeruginosa</i>
VII	Unidentified	0.5 - 3	GI	Nausea, vomiting, diarrhea, cramping	Rare	Multiple, LBM's (little brown mushrooms)

MUSHROOM POISONING

sepsis, and hepatic coma may develop. Most deaths take place within four to seven days.^{2, 7} Estimated mortality rates for Group I ingestions range from 50 to 95 percent.^{5, 8}

Group II mushrooms contain varying amounts of ibotenic acid and muscimol, as well as small amounts of muscarine.⁸ Despite the name of its most famous member, *A muscaria*, anticholinergic effects usually predominate over muscarinic effects.⁸ Ingestion typically results in a state of ethanol-like inebriation associated with ataxia and incoordination; visual hallucinations and reality disturbances occur less commonly.

Group III mushrooms contain gyromitrin, which is hydrolyzed in the body to form monomethylhydrazine, an agent used in rocket fuel.^{3, 8} This toxin causes a delayed onset of cellular destruction, manifested clinically by fever, liver failure and CNS changes ranging from stimulation to coma. Hemolysis, methemoglobinemia and an INH-like poisoning can result (both INH and gyromitrin interfere with the central nervous system neurotransmitter GABA, gammaaminobutyric acid).⁸ Monomethylhydrazine is volatile and the inhalation of cooking fumes can also lead to symptoms.⁵ Group III ingestions have a mortality rate ranging from 15 to 40 percent.^{3, 5}

Large amounts of muscarine found in Group IV mushrooms can cause a cholinergic crisis.⁸ Because it is a quaternary ammonia compound, muscarine does not cross the blood-brain barrier and only produces peripheral effects. These are manifested clinically by the appearance of the SLUDGE syndrome (Salivation, Lacrimation, Urination, Defecation, Gastrointestinal cramps, and Emesis).⁵ Death usually only occurs in patients with underlying disease.

Coprine, an amino acid which inactivates acetaldehyde dehydrogenase, is found in Group V mushrooms; if a patient subsequently drinks any alcohol, an antabuse-like reaction develops.^{5, 8} Coprine containing mushrooms can cause delayed alcohol reactions as long as five to seven days following their ingestion.^{5, 8} Clinical signs and symptoms include headaches, flushing, tachycardia, miosis, paresthesias, anxiety and hypotension. Cardiac ischemia and arrhythmias have also been reported.

The "magic mushrooms" of Group VI contain psilocybin or psilocins and are taken for recreational drug use. These agents cause clinical CNS effects similar to lysergic acid (LSD).⁵ Intoxica-

tion results in ataxia, mood elevation and hallucinations, generally lasting four to six hours.⁸ No deaths have been attributed to this type of ingestion.

Group VII encompasses a wide variety of gastrointestinal irritants and unknown toxins.⁸ These partially heat stable toxins cause violent reactions but are rarely fatal. Mushrooms of the same species picked from different localities can cause markedly different clinical effects; individual susceptibility also plays a large role in response to this group.⁵

An accurate diagnosis can be made on the basis of history and initial symptoms in 90 percent of mushroom poisonings.⁹ However, unless a history of ingestion is volunteered or actively sought, proper diagnosis can be difficult. Nausea, vomiting, diarrhea and cramps make the clinical picture indistinguishable from gastroenteritis; therefore, clinicians must maintain a high index of suspicion. Even if a history of mushroom ingestion is obtained, several different species may have been consumed and the possibility of a mixed overdose must be considered.⁵

Although laboratory tests are generally of no benefit during the early stages of mushroom poisoning,^{2,9} they may provide useful clues in more advanced cases. An elevation of liver enzymes, bilirubin and a fall in blood glucose suggest amatoxin poisoning.³ Likewise, hemoglobinuria, methemoglobinemia, or free hemoglobin suggest monomethylhydrazine poisoning.³ While specific toxins can be identified by high performance liquid chromatography or radioimmune assay, these tests are rarely available outside of research facilities.⁹ Meixner's test for amatoxins can be performed in any office. A piece of mushroom is rubbed into newsprint and allowed to dry. A drop of hydrochloric acid is placed on this spot and a blue-green color change signifies the presence of amatoxins. However, false positive reactions occur and a negative test does not rule out the presence of other toxins (gyromitrin, coprine).⁹

Following a toxic ingestion, suspect mushrooms should be obtained and preserved for subsequent identification by a mycologist. To prevent their rapid deterioration, samples should be kept in waxed paper, not plastic bags; they should be refrigerated and not frozen.^{1, 5, 9} Remember, several species may have been consumed and the available samples may not include the one ingested. Spores obtained from vomitus, feces or

MUSHROOM POISONING

gastric aspiration can be stained with either Melzer's agent or one percent Fushsin, which may aid in provisional identification.^{5, 8, 9}

Treatment of a toxic mushroom ingestion centers on basic poison management and good supportive care.^{5, 7} The first step is gut decontamination; this is accomplished by removing free toxin from the gastrointestinal tract and blocking its further absorption. If the patient is not already vomiting, an appropriate dose of syrup of ipecac (30 cc for adult, 10-15 cc for child) should be administered followed by activated charcoal (1 gm/kg).⁵ Because amatoxins are reabsorbed from bile, 20 gms of activated charcoal should be readministered every four hours for the first three days.⁴ Enterohepatic biliary diversion or duodenal drainage is useful for the same reason.⁷ Cathartics such as sorbitol or magnesium citrate can be given to speed transit time but are rarely required because of existing diarrhea. Because they cause retention of toxins in the GI tract, antispasmodic agents are contraindicated. Intravenous fluids are administered to treat hypotension and prevent dehydration; glucose and electrolytes should be replaced as determined by their serum measurements.³ In suspected amatoxin exposures, hepatic and renal function also should be closely monitored for at least 48 hours and protein restriction may become necessary.⁴ Vitamin K and fresh frozen plasma should be given if coagulation difficulties develop.⁴ Although they may be indicated in acute fulminant hepatitis, steroids have been associated with an increased mortality rate and should not be used routinely.¹¹

Although most poisonings respond to the general measures just mentioned, some select cases may benefit from specific antidotal therapy. Following a Group II ingestion, severe anticholinergic signs and symptoms, such as hypertension, supraventricular tachycardias, seizures, or dangerous psychotic behavior, may respond to physostigmine; anticholinergic agents such as atropine are contraindicated.³ For the INH-like poisoning following a Group III ingestion, pyridoxine HCl, which catalyzes the formation of new GABA, is helpful. This is usually given in doses of 25 mg/kg IV over 30 minutes, but larger amounts may be required; there are reports of some patients requiring as much as 20 gm.^{3, 10} Alkalinization of the urine in monomethylhydrazine ingestions prevents renal damage from pigment excretion and methylene blue should be given if significant met-

hemoglobinemia develops (levels greater than 30 percent).⁸ Group IV ingestions displaying excessive cholinergic responses usually respond to atropine. In the face of the antabuse-like syndrome and arrhythmias following a Group V ingestion, propranolol may be helpful but epinephrine is contraindicated.

Although circulating amatoxins can be detected in the serum of poisoned patients as long as 30 hours following ingestion,⁷ antiamatoxin therapy is quite controversial. While there may be **no effective current therapy whatsoever** against amatoxin ingestions above a certain threshold,¹¹ intervention in borderline cases may be beneficial. A review of the literature finds several agents mentioned as possibly useful antiamatoxins, including intravenous penicillin G, silibinin and thioctic acid (all are investigational uses in the United States but used clinically in Europe). In a recent review of therapy in 205 cases of amatoxin poisoning, Floersheim found that intravenous penicillin G, given in doses of 300,000 to one million units/kg/day, resulted in statistically significant clinical improvement.¹¹ Penicillin works in one or more of the following manners: it competes with amatoxin for protein binding sites, which results in more free toxin being excreted in the urine;^{2, 5} it may help ameliorate subsequent encephalopathy by sterilizing the intestinal flora;¹¹ it may inhibit the uptake of amatoxin into hepatic cells.⁷ Silibinin, a preparation of the active principle of milk thistle, is also believed to inhibit the penetration of amatoxins into hepatic cells. Floersheim found difficulty in proving its clinical usefulness but felt that given early, in doses of 20-50 mg/kg/day, it provides some prophylactic benefit against liver damage.¹¹ Although many centers still advocate the use of thioctic acid, it has not been shown to produce any definite clinical benefit;⁷ some studies have even associated thioctic acid with increased mortality rates.¹¹ Other experimental modalities tried, but of unproven efficacy, include the use of plasma exchange, charcoal hemoperfusion and cimetidine.^{4, 7} Vesconi, et al, believe early forced diuresis to be of benefit in removing amatoxins.⁷

CONCLUSION

Because supportive care remains the mainstay of successful treatment, clinicians should always "treat the patient and not the mushroom." Mushroom poisonings characterized by a short time

interval from ingestion to illness have violent symptoms, but are rarely life-threatening; **fatal cases are typically associated with the delayed onset of symptoms.** Ideally, a prearranged plan exists between local hospitals and a nearby university or mycological society to assist in the identification of mushroom specimens. The South Carolina Palmetto Poison Control Center (1-800-922-1117) has a mycologist on call and can assist practitioners with current treatment recommendations. □

ACKNOWLEDGMENTS

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THE COST OF CIVIL COMMITMENT IN SOUTH CAROLINA: ADVANTAGES OF DECENTRALIZED PSYCHIATRIC HOSPITAL SERVICES*

ALBERTO B. SANTOS, JR., M.D.**

JAMES W. THRASHER, JR., M.D., J.D.

"As long as there are persons we can call mentally disabled individuals, there will be efforts, often conflicting, to help them get proper care and treatment, ensure that their basic human rights are not ignored, insulate society from their different ways and protect society from what is perceived as their potential for antisocial actions. The differences in the possible outcomes of these four competing concerns are measured first by how society chooses to balance them and then by the effectiveness of the policies that are used to implement society's wishes."

John Parry¹

Institutional care for the mentally ill was initiated as a humane approach to providing sanctuary and treatment while keeping "undesirables" effectively insulated, out of public view. Unfortunately, it also promoted morbidity and impaired the skills patients needed to subsequently negotiate the everyday challenges of life. Placement of psychiatric patients in artificial, centralized, "mini city" state hospitals created a forced separation from their ordinary cultural demands. This separation negated efforts toward rehabilitation and created a new, governmentally promoted iatrogenic syndrome, "institutionalization."

A national movement towards deinstitutionalization, decentralization, and community-based comprehensive psychiatric services is underway. This requires the development of acute hospital-based care, mobile emergency services, crisis shelters, partial day-care, home health care, supervised housing and a myriad of other treatment modalities in local communities. While these services may be easier to develop in larger cities and municipalities with greater resources, the realization of community-based care is possible every-

where with proper community support and leadership.

In South Carolina, earlier decisions have required that the hospital-based care for the majority of indigents across the state be delivered in a cluster of facilities in Columbia.² However, optimal modern care of the seriously mentally ill involves decentralization of inpatient services and the development of a system of care in the patient's local communities.³ As such, the South Carolina Department of Mental Health has developed a five-year plan which calls for decentralization of its hospital services and a significant decrease in census for its psychiatric facilities in Columbia.

In keeping with this mission, a public psychiatric inpatient unit was opened in a community hospital in Charleston in 1985. Prior to its opening, most indigent psychiatric patients from this area were hospitalized 100 miles away in the state's central facilities in Columbia. With the critical support of many local agencies, in particular the Charleston Probate Court, this project has clearly demonstrated that the use of local facilities (1) is of significant clinical benefit through improved continuity of care, (2) is obviously convenient to patients, their families, the court, and the police, and (3) represents a significant increase in cost-effectiveness for these basic health services. The aim of this paper is to illustrate these three advantages of decentralized psychiatric hospital care and to stimulate interest in similar community-based projects throughout the state.

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PROJECT DESCRIPTION

A psychiatric inpatient unit of 12 beds opened on April 15, 1985 in Charleston. It was established through a contractual agreement involving Charleston County Council, the South Carolina Department of Mental Health, the Charleston Area Mental Health Center, and the Medical University of South Carolina (MUSC). University psychiatric faculty and residents and a Mental Health Center psychiatrist comprise its medical staff. It is an acute care, rapid stabilization unit with prompt return of the patient to the community its primary goal. Located at Charleston Memorial Hospital, (CMH) a 150-bed, county-supported, general hospital staffed and operated by MUSC, it is the primary provider of emergency services to indigent residents of the Charleston area. Patient's pay status year to date (1987) is 21 percent Medicare; 14 percent Medicaid; nine percent commercial carriers; 20 percent Medically Indigent Assistance Fund, self-pay, or other; and 36 percent indigent (no-pay).

The University psychiatrists who provide consultation to CMH's Emergency Room (E.R.) are now able to admit directly to this unit, which is located immediately above the E.R. complex. Patients admitted are usually treated by the same psychiatrist who evaluated them in the E.R. This significantly improves the continuity of care. Further, a new short-term outpatient clinic has been established to provide initial follow-up for discharged patients by the same psychiatrists and is located at the Charleston Area Mental Health Center, a few yards away from Charleston Memorial Hospital.

RESULTS

We have collected demographic, clinical, and fiscal data for each patient admitted to the CMH psychiatry unit and will report on the period from April 15, 1985 to February 28, 1987.

Patients were predominantly self-, family-, or police-referred. Need for hospitalization clustered around agitated psychotic states and patients displaying a high risk for suicide. The unit's occupancy rate remained above 90 percent and recidivism was under five percent. Average length of stay was 10 days. Eighty percent of discharged patients returned directly to their place of residence in and about the local area.

Total admissions for the two years of operation was 802. As part of our admissions procedure,

TABLE I
Admissions to Charleston Memorial Hospital Psychiatric
Inpatient Unit
April 15, 1985 to February 28, 1987

Total admissions	802 patients
Number meeting criteria for involuntary commitment	715 of 802 (89%)
Voluntarily admissions (out of number meeting voluntary commitment criteria)	532 of 715 (74%)
Involuntary admissions (out of number meeting commitment criteria)	183 of 715 (26%)
Involuntary admissions granted early release	101 of 183 (55%)
Involuntary admissions held for probate court hearing	82 of 183 (45%)
Number of patients meeting commitment criteria who actually required a probate court hearing in Charleston	82 of 715 (12%)

each admitting psychiatrist answered the following question:

"Did the patient meet the criteria for emergency commitment *and* would you have committed the patient to a S. C. State Hospital facility in Columbia if not admitted to the CMH Psychiatry Unit?"

The admitting psychiatrist answered "yes" to this question for 715 of the 802 admissions, i.e., 89 percent of the patients hospitalized on this unit met S. C. criteria for emergency commitment. (Table I) Out of these 715 potential commitments to Columbia, a majority, 532 (74 percent) admitted themselves voluntarily, to our local facility. Only 183 of these 715 committable patients (26 percent) required emergency involuntary commitment orders to be hospitalized locally at CMH.

Furthermore, a facility can request dismissal of emergency commitment orders from the Probate Court on the grounds that the patient no longer meets criteria for commitment (this must be accomplished before the seventh hospital day). When early release is granted, the patient can be discharged, but may elect to remain in the hospital on a voluntary basis. This request for early release was made for 104 of our 183 committed patients and was granted on 101 (55 percent) of them. Therefore, only 82 of 715 patients meeting commitment criteria (12 percent) actually required a probate court hearing in Charleston.

CIVIL COMMITMENT

The average length of stay (ALOS) of 802 patients hospitalized in the local 12-bed psychiatric unit was 10 days. The ALOS of 544 patients who for lack of an available bed in the local unit were committed under emergency involuntary orders to Columbia facilities during the same time period was 33.6 days.⁴ The difference in ALOS between the local and central facility represented a theoretical utilization reduction of 16,874 patient bed-days for the 532 voluntary admissions to the local unit meeting commitment criteria. At the Medicare fee of \$150/day, this represented a potential cost savings for the two years of operation of \$2,531,100 (Table II).

Only 183 of 715 patients (26 percent) meeting commitment criteria actually required commitment to the local unit, and of these 101 were granted early release, thereby avoiding the need to remain in the hospital awaiting a hearing. Given the difference in ALOS between the central and local hospitalizations, this early release option represented an additional reduction of approximately 2,384 patient bed-days, or at \$150 per patient bed-day, a potential savings of some \$357,600 (Table II).

The total potential cost savings for the project for its first two years of operation is therefore estimated at \$2,888,700 or nearly 1.5 million dollars per year based on Medicare fees for patient bed-days utilized. Of course these bed-days were actually utilized by other patients needing care. In fact, far more patients were served, and the funds were disbursed locally to the benefit of the local community, its taxpayers, and its patients.

DISCUSSION

Prior to the opening of this unit, options for psychiatric hospital indigent care were relatively limited in Charleston. Unfunded psychiatric patients who presented with emergencies at various levels of dangerousness became candidates for treatment in a facility in Columbia. For a family member or interested party to transport the patient to Columbia was often financially impossible and risky. Understandably, a patient who was willing to be admitted locally, often refused to go elsewhere. The only practical alternative was transportation to Columbia by a sheriff's officer under existing S. C. statutes, but this requires involuntary emergency commitment. Therefore,

TABLE II
Projected Potential Savings in Utilization of Patient Bed-Days and Cost From Local Hospital Option
April 15, 1985 to February 28, 1987

Number of voluntary admissions to local unit meeting criteria for involuntary commitment	532 of 715 (74%)	
Number of patient bed-days at local facility given ALOS = 10 days ¹	7,150	
Projected number of patient bed-days if committed to central facility given ALOS = 33.6 days ²	24,024	
Projected savings in utilization of patient bed-days		<u>16,874</u>
Savings in cost at \$150 per patient bed-days		<u>\$2,531,000</u>
<hr/>		
Total involuntary commitments to local facility	183	
Number of involuntary commitments granted <u>early release</u>	101	
Number of additional patient bed-days saved from early release option ³		<u>2,384</u>
Cost savings at \$150 per patient bed-day		<u>\$357,600</u>
<hr/>		
Total projected savings in patient bed-day utilization and costs	19,258 patient bed-days	
	or <u>\$2,888,700</u>	
	(approximately 2 years)	

1. ALOS of 802 patients admitted to Charleston Memorial Hospital Psychiatry Unit during study period.

2. ALOS of 544 patients committed under emergency involuntary order to Columbia facilities during study period.

3. IX Projected difference between local ALOS = 10 days and ALOS = 33.6 days, at Central facility.

CIVIL COMMITMENT

some indigent psychiatric patients from the Charleston area were hospitalized at the Columbia facility under an involuntary emergency commitment order, even if they were willing to be admitted voluntarily if options had been available locally.

This project has decreased the need for transportation to a central facility in Columbia for psychiatric treatment. For the period studied, approximately 60 percent of public psychiatric admissions were diverted away from centralized care in Columbia with this 12-bed unit. A majority (74 percent) of patients meeting involuntary commitment criteria admitted themselves voluntarily when presented with a local hospital alternative. Further, for over half of those committed involuntarily, it was possible to obtain dismissal of commitment orders. As such, a remarkably low number (12 percent) of patients presenting with symptoms meeting commitment criteria actually necessitated a probate hearing given both the availability of a local psychiatric unit and the proper use of the early release option for committed patients. In addition, because of these two factors, the average length of stay of patients hospitalized locally is roughly half as long as for those hospitalized in the central facilities. These data, therefore, indicate that over twice the number of patients can be served with the availability of local inpatient options.

Coordination of clinical, legal, and social support services are obviously best achieved in a patient's community of residence.⁵ Care delivered in the patient's local community results in more rapid stabilization and return to normal living in supportive, familiar surroundings and within a supportive network of available professionals. The cost-effectiveness, convenience, and improvement in quality and continuity of care make local alternatives for psychiatric hospitalization desirable.

South Carolina Department of Mental Health policy mandates all counties to be provided 24-hour psychiatric screening and evaluation through local mental health centers with the goal of development of local alternatives to hospi-

talization in the state's central facilities. The pilot work on this system suggests significant advantages for clinical care and public resource utilization through vigorous development and use of local alternatives.⁶ The alternatives in this pilot work, conducted at the Catawba and Coastal Empire Mental Health Centers, included the effective use of non-hospital based crisis housing.

Community-based acute hospital care is an essential part of the spectrum of services necessary for deinstitutionalization to occur in our state. Physicians can help continue to update the treatment of psychiatric patients in South Carolina by advising and assisting local area mental health centers and county governments in developing local alternatives to a primary system of centralized psychiatric care. Strong community support for programs such as the one described is available from your area's chapter of the South Carolina Alliance for the Mentally Ill, a well-organized family advocacy organization with an impressive record of lobbying efforts for improvement in the care of severely disabled psychiatric patients. We urge your attention to this matter in your area of the state. □

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THE RISE OF ORGANIZED PEDIATRICS IN SOUTH CAROLINA: A BRIEF HISTORY OF THE SOUTH CAROLINA PEDIATRIC SOCIETY AND OF THE SOUTH CAROLINA CHAPTER OF THE AMERICAN ACADEMY OF PEDIATRICS*

HENRY W. MOORE, M.D.

DONNA H. BRYAN, A.B.

C. WARREN DERRICK, JR., M.D.

Dr. Joseph I. Waring, distinguished pediatrician and noted medical historian from Charleston, has recorded in elegant fashion the history of pediatrics in South Carolina.¹ To our knowledge, however, no published history of our state pediatric organizations exists. In this article, we attempt to chronicle growth and development of organized pediatrics in South Carolina in the hopes that this information will not become lost to future historians.

EARLY HISTORY OF PEDIATRICS IN SOUTH CAROLINA

Although organized pediatrics had its beginnings in South Carolina in the early 20th century, the identification and separation of "diseases peculiar to childhood" began in the late 18th century in Charleston, a city on the national forefront in medicine at the time.² According to Dr. Joseph I. Waring, Dr. Lionel Chalmers of Charleston published a two-volume book entitled *An Account of the Weather and Diseases in South Carolina* in which he devoted considerable space to diseases of children. Dr. Waring concludes that "One might perhaps with reason consider him (Chalmers) the first pediatrician, or at least the first practitioner in America to show a decided recorded interest in children."³

During that exciting time in our state's medical history, other physicians in Charleston made contributions to the early pediatric literature—notably Dr. George Logan whose thesis entitled, "On the Prevention and Treatment of Diseases of In-

fants," espoused the novel notion that a doctor's duty was "not merely to cure and relieve diseases but also to guard against their onset." Dr. Logan's son, George Logan, III, carried on in his father's tradition by becoming physician to the Orphan House, a facility opened in 1794 and said to have been the first public child care institution in this country. In 1825, Dr. Logan published a book in Charleston, *Practical Observations on the Diseases of Children*, which was one of the first American medical texts strictly devoted to pediatrics.⁴

ORGANIZED PEDIATRICS IN THE 19TH CENTURY

It was not until the late 1800's, when children's hospitals first appeared, that pediatrics began to formulate its separate identity. Prior to that time, the infant was considered to be the property of the obstetrician and the older child was relegated to the generalist.⁵

This increased interest in pediatrics in the late 19th century led to the formal declaration of pediatrics as a specialty. In 1880, Abraham Jacobi, Father of American Pediatrics, founded the Section of Pediatrics of the American Medical Association (AMA) and in 1888 launched the American Pediatric Society, brain-child of Job Lewis Smith. The first state pediatric society was established in Ohio in 1885, followed by other state societies in rapid succession.⁵ South Carolina, however, was not to form its pediatric society until well into the 20th century.

EARLY 20TH CENTURY PEDIATRICS IN SOUTH CAROLINA

"The most important pediatric milestone during the first quarter of the 20th century was the

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FIGURE 1. Dr. William Weston, Sr., of Columbia, was the first pediatrician in the Southeast and a founding member of the South Carolina Pediatric Society and the American Academy of Pediatrics.

gradual acceptance of pediatrics as a specialty. In 1900 there probably were not over 50 medical practitioners in the whole country who took a particular interest in this age group and not a half-dozen men practiced pediatrics exclusively."⁶

In South Carolina, records at the Medical College of South Carolina (MCSC) report courses on "Diseases of Children" first being taught as separate courses in 1903-04.⁷ The prevailing idea that a child was simply "a little man" was fast being discarded by this time. Many family physicians began seeking post-graduate study in pediatrics, and some, ultimately, went so far as to limit their practice to children.

Undoubtedly, the first physician to limit his practice to pediatrics in South Carolina was Dr. William Weston, Sr., of Columbia, who began to practice this specialty in 1912 after post-graduate study at Harvard and Columbia Universities. Dr. William P. Cornell appears to have been the second physician to do so, but the exact year remains uncertain.

In 1903, Dr. Lane Mullally of Charleston became Professor of Obstetrics and Diseases of Children at MCSC. He served in this post until 1913, when Dr. William P. Cornell was appointed as the first Clinical Professor of Pediatrics, at which time Dr. Mullally's title was shortened to "Professor of Obstetrics." At the same time, Dr. Richard M. Pollitzer was appointed Assistant in Pediatrics and Medicine.⁷

In 1917, Dr. Cornell resigned his position at MCSC to go into family tin-mining adventure in

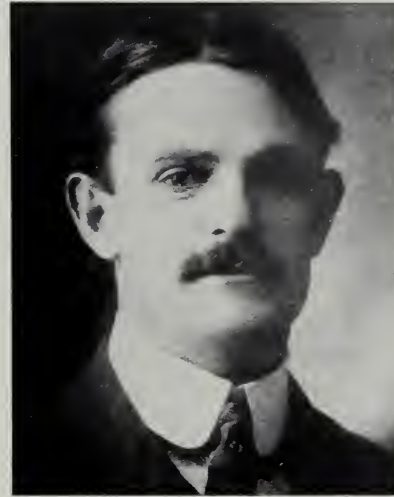


FIGURE 2. Dr. William P. Cornell served as the first clinical professor of pediatrics at the Medical College of South Carolina and, along with Dr. Richard M. Pollitzer, was primarily responsible for organizing the South Carolina Pediatric Society and served as its first president.

North Carolina, and Dr. Pollitzer succeeded him at MCSC. After a four-year absence from medicine, Dr. Cornell returned to pediatric practice in Columbia in 1920.

FORMATION OF THE SOUTH CAROLINA PEDIATRIC SOCIETY

In 1921, during the annual South Carolina Medical Association (SCMA) meeting in Columbia, a group of seven physicians interested in pediatrics met at Dr. Cornell's home to organize a state pediatric society. Dr. Cornell was elected president; Dr. Richard Pollitzer of Charleston was named vice-president; and Dr. Edgar A. Hines of Seneca became secretary-treasurer. Five other physicians, in addition to the seven present, were invited to become charter members. Existing records⁸ reveal that that the founding members were as follows:

° Dr. Edward W. Barron	Columbia
° Dr. Mylnor W. Beach	Charleston
° Dr. William P. Cornell	Columbia
° Dr. G. C. Glover	Greenville
Dr. E. A. Hines	Seneca
Dr. H. A. Mood	Sumter
° Dr. R. M. Pollitzer	Charleston
Dr. F. K. Rhodes	Florence
° Dr. Wythe M. Rhett	Charleston
° Dr. D. Lesesne Smith	Spartanburg
° Dr. J. E. Watson	Anderson
° Dr. William Weston	Columbia

° Practice limited to pediatrics

ORGANIZED PEDIATRICS

In 1922, all South Carolina physicians interested in pediatrics were invited to join the Society and the membership rose to 39. Drs. Pollitzer and Cornell wrote a constitution and by-laws, and the group adopted as its name, "South Carolina Pediatric Society."⁸

After Dr. Cornell's death in 1924, the Society became inactive for several years. At a re-organizational meeting on January 13, 1928, Dr. Charles W. Bailey reported that a new constitution and by-laws had been written, since copies of the originals could not be found. Beginning in 1928, meetings were scheduled at a mutually agreeable time and place. In the early years of the

Society, the meetings were held twice a year. A scientific meeting was generally held in Columbia (though occasionally elsewhere), followed by a social hour and dinner. An executive committee meeting, coinciding with the SCMA annual meeting, was also scheduled, and all society members present at the state meeting were invited to attend. Dues were set at two dollars per year, and provisions were made for regular and associate members.

In some years, the executive committee meeting appears to have been the only meeting that was held, as few records exist to show any other

TABLE 1
Presidents - South Carolina Pediatric Society

1921	William P. Cornell	1957-58	Fred F. Adams, Jr.
1922	Richard M. Pollitzer	1958-59	Guy C. Castles, Jr.
* 1923-27		1959-60	Charles H. Zemp, Jr.
1928-29	Charles W. Bailey	1960-61	Kenneth H. Herbert
1929-30	Edgar A. Hines	1961-62	Casper H. Wiggins
1930-31	Mylnor W. Beach	1962-63	Howard B. Smith
1931-32	Edward W. Barron	1963-64	J. Earle Furman
1932-33	Thomas D. Dotterer	1964-65	Clarence C. Lyles
1933-34	Joseph I. Waring	1965-66	John W. Rainey, Jr.
1934-35	Julian P. Price	1966-67	Jack W. Rhodes
1935-36	William Weston, Jr.	1967-68	Charles R. Propst
1936-37	LeLand B. Salters	1968-69	Colquitt Sims, Jr.
1937-38	William Weston, Sr.	1969-70	Robert W. Gibbes
1938-39	Mylnor W. Beach	1970-71	Harold P. Jackson
1939-40	D. Lesesne Smith, Jr.	1971-72	George McFarland Mood, Jr.
1940-41	Richard B. Josey	1972-73	Hilla Sheriff
1941-42	Isaac B. Grimball	1973-74	Jack W. Rhodes
1942-43	Lonita Boggs	1974-75	Robert C. Brownlee
** 1943-45		1975-76	Milton C. Westpal
1946-47	George Dean Johnson	1976-77	Arno R. Hohn
1947-48	Bachman Smith	1977-78	James O. Morphis
1948-49	B. Owen Ravenel	1978-79	Ben C. Pendarvis
1949-50	John R. Harvin	1979-80	Tom L. Austin
1950-51	Henry W. Moore	1980-81	Charles P. Darby
1951-52	Walter M. Hart	1981-82	Margaret Q. Jenkins
1952-53	C. Benton Burns	1983-84	William R. DeLoache
1953-54	J. Rufus Bratton	1984-85	Casper H. Wiggins
1954-55	John R. Paul, Jr.	1985-86	J. "Pete" Matthews, Jr.
1955-56	John C. Bonner	1986-87	O. Marion Burton
1956-57	William R. DeLoache		

* We believe that Dr. E.A. Hines was president in 1923. After Dr. Cornell's death in 1924, the Society became inactive until reorganization in 1928.

** The SC Pediatric Society did not meet during the period of World War II. Thus, the officers elected in 1942, remained in office until the reactivation of the Society in 1946.

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activity. Initially, officers in the Society consisted of president, vice-president and secretary-treasurer. When the Pediatric Society was merged with the South Carolina Chapter of the American Academy of Pediatrics in 1970, the president of the Society was retained as a separate office while the other offices were integrated. Since 1921, there have been 52 presidents of the Society. (Table 1)

Through the years, the Pediatric Society has experienced some lean and trying periods, especially during the Great Depression and World War II. The Depression caused almost universal "hard times" and the medical community did not escape impoverishment by the desperate economic situation. Examples of the hardships faced by pediatricians during this period are illustrated in the following letters from Clifford G. Grulee, secretary/treasurer of the American Academy of Pediatrics, to Dr. Joseph I. Waring of Charleston:⁹

June 26, 1931

Dear Doctor Waring:

Take your time about paying your initiation fee and dues, just so it gets in before the first of the year.

With kindest regards,
Sincerely yours,
Clifford G. Grulee

December 31, 1931

Dear Doctor Waring:

I guess the American Academy of Pediatrics can afford to carry you along for a while. We are the only institution in the United States that is not in need of money, in spite of the fact all its members are.

If you can send us ten dollars from time to time, we will just let it go along this way, if that is satisfactory to you. I want to tell you that your general state is not very different from that of the rest of us, though it may be of a somewhat exaggerated degree.

Yours most sincerely,
Clifford G. Grulee

As a further illustration of economic hardships faced by pediatricians during this period, the senior author (HWM) remembers a letter written by Dr. Joseph I. Waring at the lowest point of the

Depression in 1932-33. In this letter, Dr. Waring tendered his resignation from the State Pediatric Society, stating "Due to my critical financial position, I can no longer afford the two-dollar dues." No letter accepting his resignation seems to exist and we might surmise that it was never accepted.

As the economy began to improve during the mid-thirties, war clouds began to gather over Europe. As early as 1938-39, the U. S. Armed Forces began calling young physicians into active duty. As the war progressed, the physicians who remained behind as civilians found themselves burdened with increasingly heavy workloads. Adding to the burdens of this dwindling supply of practitioners were large numbers of civilian employees and dependents from the US military training bases and camps that sprang up near many South Carolina cities and towns. Patient loads increased throughout the war years and, at times, caused a few older physicians to volunteer for military service in order to escape their almost intolerable work situations. Such stressful demands on physicians during the 1940's contributed to the long dormancy of the Pediatric Society.

After the war, when many young pediatricians resumed civilian practice, a resurgence of interest in pediatrics led to re-activation of the state Pediatric Society in 1946. A few years later, while meeting in Myrtle Beach in 1951, the Pediatric Society decided to change its format due to considerable pressure from the physicians who had recently returned from military service and become active in Society affairs. The Society voted to separate its scientific meeting from the annual SCMA meeting and, with support of the pharmaceutical industry, to hold an expanded fall scientific session at a resort area, inviting nationally recognized speakers. Today, the Pediatric Society has a spring scientific session in conjunction with the SCMA and a fall session at a beach resort. In 1987, there were 177 active members, 27 emeritus members, one inactive member, and one honorary member of the South Carolina Pediatrics Society. In 1936, Dr. W. S. Davison, Dean of Duke University School of Medicine, was named an honorary member of the Society.

HISTORY OF THE SOUTH CAROLINA CHAPTER OF THE AMERICAN ACADEMY OF PEDIATRICS

The formation of the American Academy of Pediatrics began at a meeting of the Pediatric

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Section of the American Medical Association (AMA) in St. Louis in 1922.

The Sheppard-Towner Act, a proposed maternal and infant program recently introduced into Congress, was brought before the AMA session for discussion. After serious consideration, the Pediatric Section passed a resolution approving the Act. On that same day, the AMA House of Delegates passed a resolution condemning the Act. To the ruling fathers of the AMA, this independent action of the Pediatric Section was heresy. "The fat was in the fire, and tempers were hot and unrestrained. A committee of wrath from the House of Delegates was sent to reprimand the Pediatric Section, but they were met with angry jeers and unrepentance."¹⁰

The House of Delegates then angrily passed a ruling to the effect that "no section of the AMA would in the future adopt an independent resolution or in any way as a group indicate approval or lack of approval of matters concerning the policies of the AMA; and further, that all sections of the AMA would confine their functions in the future strictly to social activities of the members and to the presentation of a scientific program."¹⁰

On that day the seed was planted for the propagation of an organization of pediatricians made up of physicians who were concerned with the health and welfare of the children of this nation. No longer were the pediatricians willing to be treated as the illegitimate offspring in the family of medicine. Finally, after some eight years of deliberation and planning, an organizational meeting was held in Detroit on June 23-24, 1930. Thirty-five pediatricians from throughout the United States were present, including Dr. William Weston, Sr., of Columbia.¹⁰

A constitution was unanimously adopted on the second day and only minor changes were made over the next 30 years. Dr. Isaac A. Abt, Chicago, Illinois, was elected president; Dr. John A. Morse, New York City, New York, alternate vice-president; Dr. Clifford G. Grulee, Chicago, Illinois, secretary-treasurer. For the next 21 years, Dr. Grulee remained the primary force and voice of the AAP. Four regional chairmen were also elected, and they comprised the executive board. "American Academy of Pediatrics" was accepted as the official name of the new pediatric society.¹⁰

Drs. D. Lesesne Smith, Sr., of Spartanburg and Richard M. Pollitzer of Charleston were among

the 400 practicing pediatricians throughout the United States who were invited to join the AAP as charter members. (There is some uncertainty as to whether Dr. Edgar A. Hines of Seneca was also a charter member. Although he appears in a group photograph with other founding members in Peace's *History of the American Academy of Pediatrics*, written records do not include his name as a charter member.)

Despite Peace's contention in his 1951 *History of the AAP* that the AAP executive committee began appointing state chairmen in 1934, our research indicates that a state chairman was appointed for South Carolina as early as 1932. A letter in the Waring collection from Academy president Grulee states that Dr. Waring was appointed by "his regional committee" as chairman of the South Carolina State Committee of the American Academy of Pediatrics on April 22, 1932.¹¹

During the '30s and '40s, state chairmen were honorary appointees whose primary functions were to serve as liaison between the AAP Headquarters and the local state pediatric societies and medical associations. Being a liaison meant attending the annual national AAP meetings at his or her own expense. Another duty of the state chairman was to monitor all American Board of Pediatrics written examinations given in his or her respective state.¹⁰



FIGURE 3. Dr. Joseph I. Waring, a long-time faculty member of the Department of Pediatrics, Medical College of South Carolina, and noted medical historian, served as the first chairman of the South Carolina Chapter of the American Academy of Pediatrics.

ORGANIZED PEDIATRICS

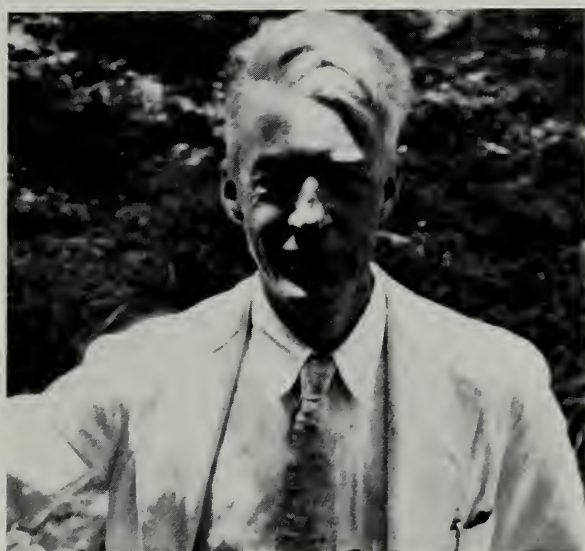


FIGURE 4. Dr. D. Lesesne Smith, Sr., founder of the Southern Pediatric Seminar. He was also a founding member of the South Carolina Pediatric Society and served as the second chairman of the South Carolina Chapter of the American Academy of Pediatrics.

Dr. D. Lesesne Smith, Sr., Spartanburg, was appointed as second state chairman in 1934. Dr. Smith was succeeded for a brief span by Dr. Richard M. Pollitzer of Greenville. Pease fails to mention Dr. Pollitzer in this capacity; however, Dr. William Weston, Jr., who was appointed some time in the middle-30's and served as state chairman until 1951, recalls that he was preceded by Pollitzer for a short period.¹²

Following the organization of the American Academy of Pediatrics in 1930, no state chapters existed until 1948. In November 1948, at the annual AAP meeting, a committee to study re-districting made the following recommendations: "(1) The states in which there are ten [10] or more members shall be organized on a society basis with election of officers and that this group hold at least one annual meeting of the Academy; and (2) that the district chairman be elected by the members of the District other than by the fellows of the entire Academy." These recommendations were approved by the membership with the appropriate changes being made in the by-laws.¹⁰

State chapters were soon formed in all the larger, more populated states where pediatricians were more numerous. Here in South Carolina the numbers were few, and the impact of World War II was so great that it was not until the latter part of 1949 or early 1950 that an active, participating local chapter was organized. Around 1950, Dr. William Weston, Jr., AAP State Chairman, ap-

pealed to the pediatricians to form a local chapter. In 1950-51, there were 19 active pediatricians practicing in the state who were eligible for AAP membership. Eligibility included being certified by the American Board of Pediatrics, although approximately 50 percent of this group had qualified for eligibility through the "grandfather clause."¹³

The South Carolina Chapter of the American Academy of Pediatrics (SCAAP) was formally organized in Columbia on September 9, 1952, during the annual State Pediatric Society meeting. All sixteen members of the AAP who were active in the SC Pediatric Society were included in the membership:

FOUNDING MEMBERS SOUTH CAROLINA CHAPTER AMERICAN ACADEMY OF PEDIATRICS 9/9/52

Mylnor W. Beach	Charleston
Lonita Boggs	Greenville
C. Benton Burns	Sumter
Thomas D. Dotterer	Columbia
Samuel Elmore	Spartanburg
John R. Harvin	Columbia
Walter M. Hart	Florence
George Dean Johnson	Spartanburg
Ethel Madden	Columbia
Henry W. Moore	Columbia
Richard M. Pollitzer	Greenville
Julian P. Price	Florence
B. Owen Ravenel	Charleston
D. Lesesne Smith, Jr.	Spartanburg
Joseph I. Waring	Charleston
William Weston, Jr.	Columbia

Dr. Joseph I. Waring of Charleston was elected first Chapter chairman for a three-year term and also agreed to serve as secretary-treasurer. The constitution drafted by Dr. Waring was a simple one containing seven by-laws and was adopted without alteration by the membership. Dues were set at one dollar per year. Meetings were to be held annually, either "during the annual meeting of the SCMA or during the fall meeting of the S. C. Pediatric Society. A quorum of ten members will be required for transaction of business or election of officers."¹³

The fledgling SCAAP was fairly dormant in the early years, but during this time there were more than occasional heated clashes and differing opin-

ions among the members of the state Pediatric Society as to the status and priorities of the Academy of Pediatrics. Indeed, for many years, the SCAAP meetings were held after the Pediatric Society meeting had adjourned, or in a far corner of the meeting room during the lunch break. With the election of Dr. Walter Hart as Chapter Chairman in 1956, attempts to establish better understanding and working relations between the two groups resulted in mutual goals and programs promoting child health care.¹³ Finally, after years of negotiating and with assistance from Drs. Jay Arena, Regional Chairman, and James Gillespie, National Chairman, the two groups were formally amalgamated in 1970 with a joint constitution and by-laws (Table 2).

Since its inception in 1952 with 16 members, the SCAAP has grown to a membership of 130 in 1987. In its 35 years of existence, the Chapter has had 15 chairmen (Table 3) and its activities and committee functions have had significant impact on pediatric care and policies in the state. Recently the SCAAP has taken an active role in promoting and influencing child health legislation; in organizing statewide and regional child health coalitions; and in recognizing individual contributions to child health causes with its annual Child Advocate Award. □

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TABLE 3

**Chairmen
South Carolina Chapter
American Academy of Pediatrics**

	1932-34	Joseph I. Waring
	1934-51	D. Lesesne Smith, Sr. Richard M. Pollitzer William Weston, Jr.
	1951-54	Joseph I. Waring
	1954-56	Mylnor W. Beach
*	1956-62	Walter M. Hart
*	1962-68	Henry W. Moore
**	1968-69	Willard B. Mills
	1970-74	Casper H. Wiggins
	1974-77	William R. DeLoache
	1977-80	David C. McLean
	1980-83	Arno R. Hohn
***	1983	Donald A. Riopel
	1983-86	C. Warren Derrick, Jr.
	1986-	John W. Rheney, Jr.
<hr/>		
*	Served two consecutive three-year terms.	
**	Willard B. Mills died in October 1969 before his term was completed.	
***	Donald A. Riopel served only one year of his three-year term before moving out of state.	

-
- ennial of the South Carolina Medical Association. Charleston: Mead Johnson and Company, 1948).
4. Waring JI: Early interest in pediatrics in South Carolina. *Pediatrics* 8(3):413-417, 1951.

Table 2

CHRONOLOGY OF ORGANIZED PEDIATRICS IN SOUTH CAROLINA

1880	Section on Pediatrics, AMA, formed
1921	South Carolina Pediatric Society formed
1930	National AAP organization formed
1952	South Carolina Chapter AAP formed
1970	Amalgamation of SCAAP and South Carolina Pediatric Society

ORGANIZED PEDIATRICS

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FIGURE 5. A typical picture of one of the outdoor seminars at Saluda, taken in the early 1950s.

FIGURE 6. THE SOUTHERN PEDIATRIC SEMINAR

"The trouble is, Frank," said Dr. Smith, "the parents are ignorant and the doctors who take care of the children don't know the latest treatments. Most of them have been out of medical school too long and the training they received in pediatrics was shallow. It is a distressing thing that infant mortality in the South is so high."

With those comments spoken in 1920, the idea for what was to become a unique and long-lived medical educational seminar began to take shape. The Southern Pediatric Seminar, as it was to be called, was the brain-child of Dr. D. Lesesne Smith Sr., a pediatrician from Spartanburg. With the help of his friend and fellow pediatrician, Dr. Frank Richardson of Black Mountain, North Carolina, the Seminar was begun in 1921 as a means to educate local physicians about current child health practices with the goal of reducing the appalling morbidity and mortality prevalent in the mountains and foothills of North and South Carolina in the early '20s. The seminar site was set on a lake in Saluda N. C., where Dr. Smith and his family had vacation homes making it conducive to attract visiting faculty for "work and recreation," and where easy access to his private children's hospital and a community charity institution in nearby Spartanburg offered ample clinical material.

The first Seminar was held in the summer of 1921 and was attended by five "student" physicians from the local area, with a faculty of 15 distinguished pediatricians from throughout the southeast. From this less than auspicious beginning, the Seminar grew in size and reputation, reaching as many as 125 physician students per session toward the end of its tenure.

The hallmark of the Seminar was its emphasis on practical clinical application. Lecturers would present topics coupled with actual patient demonstrations during the one to two week sessions. Faculty were recruited from every medical school in the south and included many distinguished academicians and practitioners. Initially, Dr. William Mulherin, Chairman of the Pediatrics Department at the University of Georgia, served as Dean with Dr. Richardson as Vice-Dean and Dr. Smith as Registrar. Subsequent Deans were Dr. Sam Ravenel of Greensboro, N. C. from 1936-1950, followed by Dr. Julian Price of Florence, S. C. and Dr. Warren Quillian of Coral Gables, Florida. However, the Seminar was first and foremost Dr. Smith's and his family's project. Dr. Smith ran the Seminar annually until his death in 1947, when his son Dr. D. Lesesne Smith, Jr. took over. Over the years, the Seminar attracted such notables as Dr. Amos Christie of Vanderbilt University, Dr. Ralph Platou of Tulane University and Dr. Jay Arena of Duke University. Despite the fact that there were no salaries or honoraria available, the faculty participated for the honor, camaraderie and dedication to teaching inherent in the Seminar's mystique.

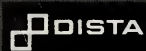
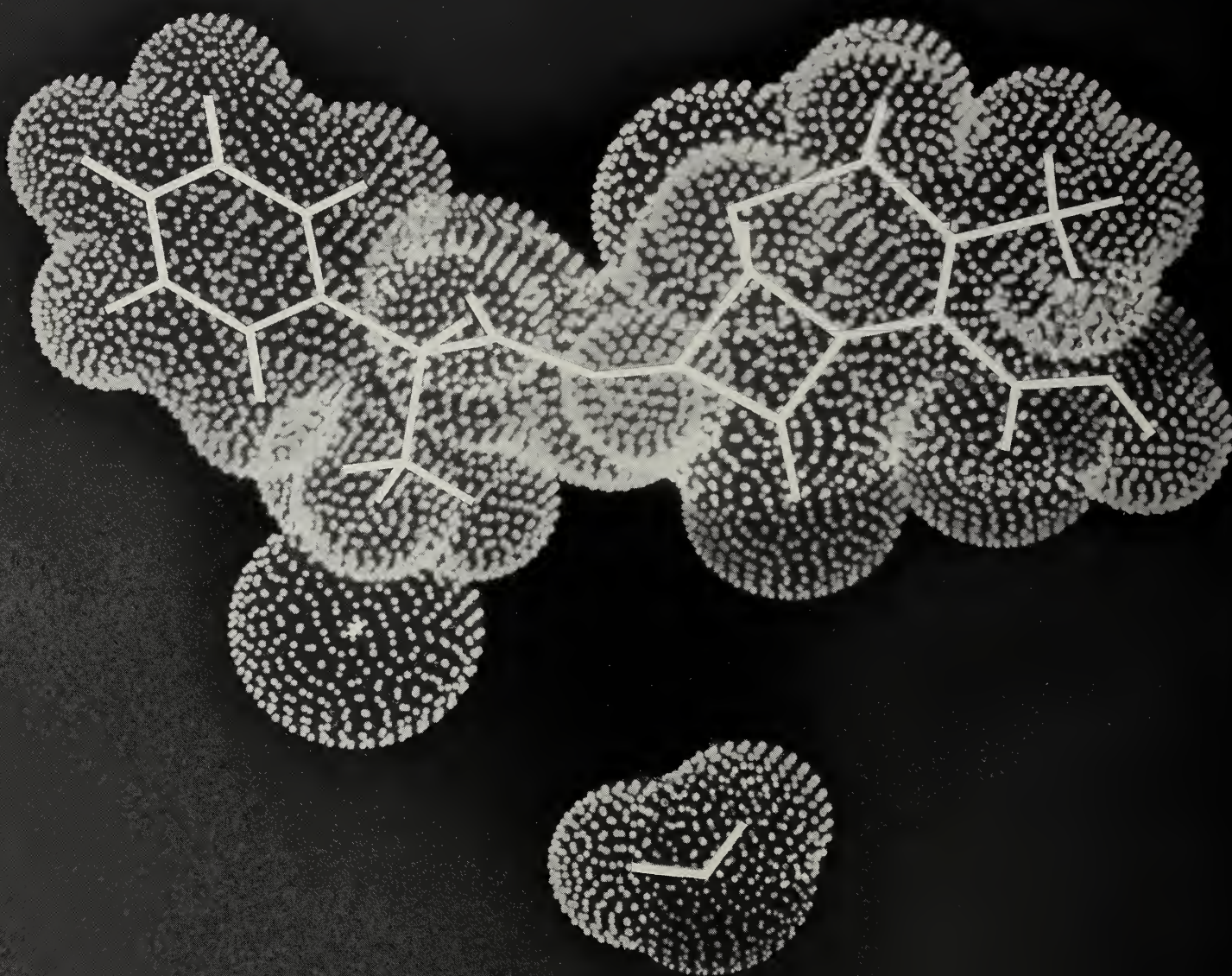
With the advent of organized CME programs throughout the country and with better geographic access via expanding airlines, the Seminar had "outlived" its usefulness by the late 1950's and closed its door in 1959. Throughout its 38 years of existence, the Southern Pediatric Seminar had a significant impact on child health practices in this region of the country and its uniqueness ensures its place in our state's medical history. (Authors' note: For a comprehensive review please see: Smith, Clara Ravenel: *The old order changeth: a history of the southern pediatric seminar*. *JSCMA* 55: 252-262, 1959.)

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Genitourinary tract infections, including acute prostatitis, caused by susceptible strains of *Escherichia coli*, *P mirabilis*, and *Klebsiella* sp.

Contraindication: Known allergy to cephalosporins.

Warnings: KEFTAB SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

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Precautions:

- Discontinue Keftab in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Keftab should be administered cautiously in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy and lactation. Cephalexin is excreted in mother's milk. Exercise caution in prescribing Keftab for these patients.
- Safety and effectiveness in children have not been established.

Adverse Reactions:

- *Gastrointestinal*, including diarrhea and, rarely, nausea and vomiting. Transient hepatitis and cholestatic jaundice have been reported rarely.
- *Hypersensitivity* in the form of rash, urticaria, angioedema, and, rarely, erythema multiforme, Stevens-Johnson syndrome, or toxic epidermal necrolysis.
- *Anaphylaxis* has been reported.
- *Other reactions* have included genital/anal pruritus, genital moniliasis, vaginitis/vaginal discharge, dizziness, fatigue, headache, eosinophilia, neutropenia, and thrombocytopenia; reversible interstitial nephritis has been reported rarely.
- Cephalosporins have been implicated in triggering seizures, particularly in patients with renal impairment.
- *Abnormalities in laboratory test results* included slight elevations in aspartate aminotransferase (AST, SGOT) and alanine aminotransferase (ALT, SGPT). False-positive reactions for glucose in the urine may occur with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

*Due to susceptible strains of *Staphylococcus aureus* and/or β -hemolytic streptococci.

†Due to susceptible strains of *Escherichia coli*, *Proteus mirabilis*, and *Klebsiella* sp.

‡Due to susceptible strains of group A β -hemolytic streptococci.

Editorial

ON THE VERGE OF A NEW GOLDEN AGE?

One senses, in some quarters, a feeling of pessimism for the future of medical practice. It has been suggested that the Golden Age of American Medicine has come and gone. Characterized by scientific progress and economic prosperity in the post-World War II era, the Golden Age became jeopardized even as it peaked. One historian claims that the high ideals of physicians combined with campaigns against socialized medicine prompted public attempts "to modify the elevated position of physicians in American society."¹ As physicians, we tend to identify other factors. Symbolizing the shaking of confidence was the crisis in malpractice liability insurance, and contributing to the pathogenesis of this crisis were society's growing litigious attitude and distrust of authority figures of any kind. The rise of self-help movements of all descriptions, and the continued presence of groups such as chiropractic, eroded the confidence in scientific medicine. Finally, failure to contain costs—due in no small measure to the inability of our society to address squarely the issue of what constitutes *entitled* health care—led to reactions first by government and then by private insurance carriers to curb physicians' incomes. When it was pointed out that physicians' incomes make up but a small fraction of total health care costs, persons in high places in both government and business were sometimes unsympathetic.

Against this background, the first glimpse of a recent editorial in *The Journal of the American Medical Association* came as something of a surprise.² The title read: "In Developed Countries, the Golden Age of Medicine is at Hand. . . ." Then one noted the afterthought: ". . . for the Patients." Dr. George D. Lundberg then outlined 10 specific reasons whereby we should anticipate an ability to provide unprecedented quality care to our patients.

- Scientific advances enable us to diagnose and manage even the most serious illnesses.
- New technology abounds. A few examples suffice: prosthetic organs; transplantation ser-

vices; still-better imaging techniques; use of DNA probes and monoclonal antibodies; endoscopy; lasers; home diagnostic tests; and human gene therapy.

- Excellent hospital facilities compete with one another for patients.
- For the first time in this century, the supply of physicians seems adequate.
- Funding for health care is, in general, adequate. The amount spent on health care in the United States—whether measured in the percentage of the gross national product (now 11 percent) or total amount—exceeds that of any other country.
- The public enjoys multiple options for medical care: private practice, group practice, HMO's, PPO's, IPA's—you name it.
- We now enjoy rapid communication and information systems.
- We are witnessing a new, constructive brand of entrepreneurialism in medicine.
- There is also a new wave of preventive medicine.
- We are able to manage our resources scientifically.

Dr. Lundberg made but brief mention of the problems facing the medical profession, considering these to be too well known to *JMA* readers to require recitation.

Is it inevitable that the lines of two Golden Ages must criss-cross—that is, rising prospects for the patients yet declining prospects for the medical profession? I think not. Further, it is certainly in the public interest that our profession retain its hard-won high morale. But we must unite behind a high sense of purpose.

Most of the current economic issues are not new. In the late 1900s, for example, controversy surrounded the concept of *contract practice* (yesterday's HMO). Physicians sought contracts by underbidding each other, and the practice continued to grow although opposed by organized medicine. Many physicians "crossed lines." Another practice—almost inconceivable today but

necessary to keep in mind—was fee-splitting whereby surgeons split the take with referring general practitioners. Commenting on these practices several years ago, Dr. Lester S. King made some projections about our future:

“The increasing complexity of medical care, the multiplication of specialties, the willingness of the public to pay high fees for surgery but not for medical care, the increasing importance of medical insurance in the payment of fees, the moral fervor of many physicians, the multiplication of professional societies to enhance the “interests” of their members, the legislative intervention to prohibit abuses that refused to remain sharply defined—all these are a few of the strands that have, today, complicated the abuses already widely prevalent in the early 1900s.”³

Dr. King’s analysis clearly indicates the value of history for predicting what we can expect from the future.

And concerning the future of medicine, the scenario analysis recently formulated by the AMA’s Council on Long Range Planning and Development seems especially relevant.⁴ Scenario analysis is a new planning technique which takes into account a range of eventualities. In one scenario, the remaining years of the 20th century are characterized by rapid growth of corporate medicine, with the overall economic growth rate being similar to that of the 1970s. In the health sector, supply will exceed demand and the government will promote managed care systems to reduce spending. The second scenario is that of hard times with a recession economy. The supply of health services will greatly exceed the demand, and there will be a reduction of public and private programs in attempt to control health care costs

and utilization. In the final scenario, there will be a robust economic growth of five percent per year. There would be a stable public policy and health benefits would be generous. Supply and demand would be in balance, and public health issues would be the dominant concerns of Congress. In each scenario, the council concluded that organized medicine would continue to be necessary.

A key conclusion of the Council on Long Range Planning and Development was that the profession must “maintain a strong sense of medical ethics and professionalism in physicians and medical students.” One challenge of organized medicine is to provide an adequate forum for dialogue, to allow disagreement, and to work out differences among ourselves. It is easy to project that the self-interests of physicians will become increasingly divergent: individual physicians versus corporate groups; fee-for-service versus pre-payment plans; specialists versus generalists; hospital-based physicians versus office-based physicians; you-name-it. Organized medicine represents the only valid umbrella for the entire profession. Only by convincing the public of our good intent—our professionalism—can we insure that *their* Golden Age will be, at least to some extent, also ours.

—CSB

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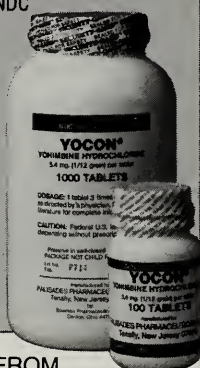
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

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IN MEMORIAM

Julian E. Jacobs, M.D., a retired Myrtle Beach physician living in Charlotte, N.C., died on September 3, 1987. Dr. Jacobs was a graduate of the University of Nebraska and University of Nebraska's Medical School. He was an Honorary member of the SCMA.

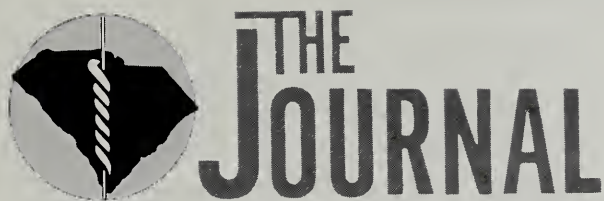
E. Gordon Able, M.D., a retired physician from Newberry, died on September 13, 1987. Dr. Able was a graduate of the Medical College of Charleston, and was an Honorary member of the SCMA.

Those wishing to make Memorials in honor of their deceased colleagues may do so by sending contributions to the S. C. Institute of Medical Education and Research, P. O. Box 11188, Columbia, SC 29211.

PHYSICIAN RECOGNITION AWARDS

The following SCMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned.

Robert B. Belk, M.D.
 James H. Brown, M.D.
 Henry F. Butehorn, M.D.
 Parmanand J. Dawani, M.D.
 Gary A. Delaney, M.D.
 Bruce L. Eames, M.D.
 Martha S. Eames, M.D.
 John H. Hanna, M.D.
 Linda H. Jackson, M.D.
 Mohanmad H. Jafroodi, M.D.
 Rajeev Malick, M.D.
 Donald L. Miller, M.D.
 Lawrence H. Parrott, M.D.
 Edward Shmuness, M.D.



OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

VOLUME 84

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NUMBER 2

STERIODS: DO THEY ENHANCE ATHLETIC PERFORMANCE?

A. L. STRICKLAND, M.D.*

Joe Coley is a sophomore at All-American University. Realizing that in order to play the defensive line in major college football, he has to be heavier and stronger because his opponent usually outweighs him by 35 pounds and can bench-press 50 pounds more. To build his strength, he strenuously works long hours in the gymnasium. Despite his efforts, he can only bench press 300 pounds. Rumors around the campus are that a miracle drug called "steroids" may help him to add weight and strength. Such drugs are often obtainable from some physicians who will prescribe medication to treat a fictitious ailment such as "for rapid healing of a sprained ankle." Since he achieved the desired weight gain and strength after two months' consumption of the drug, he is now a confirmed believer in the benefit of steroids for competitive sports. He continues the ready access to the drug through a local black market.

What are steroids? The term "steroids" includes a group of compounds with different classes having entirely different effects, despite having a similar nucleus of three benzene rings composed of six carbon atoms each and one with only five.¹ The main class is the glucocorticoids with 21 carbons. Cortisone and cortisol are the chief examples of this class and are the true "steroids." Cortisone is among the most frequently used drugs in medicine. Androgens (male sex hormones), estrogens (female sex hormones), and progesterone (also a type of female hormone) are also loosely termed "steroids" because they are

derived from cholesterol through the same chemical pathways as cortisol. The steroids used by athletes are androgens, such as testosterone (the natural androgen made in the testes) or synthetic androgens. The latter are derivatives of testosterone with side-chain substitutions, such as an alkyl radical (methyl group—CH₃) at the 17th carbon. This substitution enhances the effect of the compound by prolonging the half-life through resisting degradation by liver enzymes. These synthetic forms can also be taken orally rather than parenterally.² The substitutions make these drugs more anabolic (protein sparing) rather than androgenic (effects on body hair growth, libido, acne, voice change, i.e. characteristics of maleness). The anabolic and androgenic effects haven't been fully separated, however, since all synthetic androgens retain undesirable side effects of androgens and are not therefore purely anabolic.

The steroid nucleus is composed of a base of 17 carbons. Androgens have 19 carbons, estrogens 18, and corticoids have 21. The structures in Figures 1 and 2 show these differences which impact variable effects.

The most common oral steroids used by athletes are oxandrolone, fluoxymesterone, and stanozolol. The FDA (Federal Drug Administration) requires a warning in the *Physicians Desk Reference* as follows: Warning: "Anabolic steroids do not enhance athletic ability." Replacement dose of the two oral androgens listed in Figure 2 for hypogonadal men is five to 10 mg per day, but athletes often take 50 to 100 mg per day.

Researchers have shown that anabolic steroids stimulate the growth of muscle by increasing pro-

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FIGURE 1.

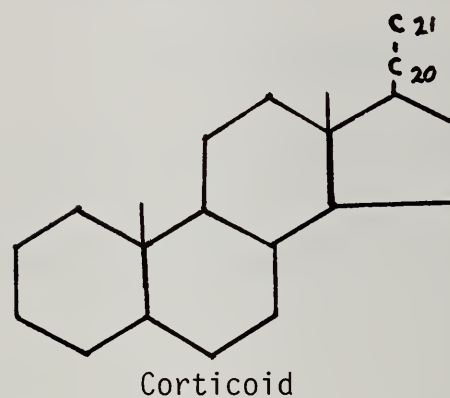
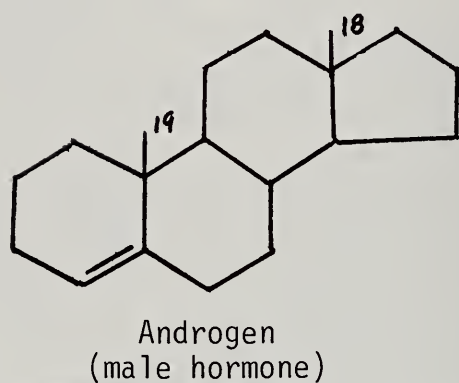
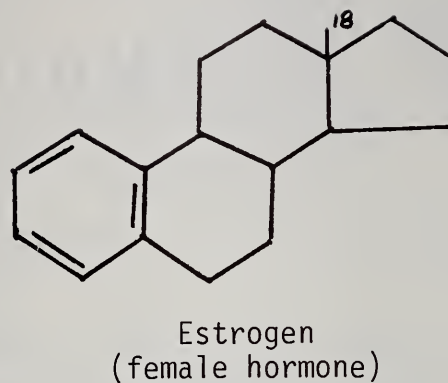
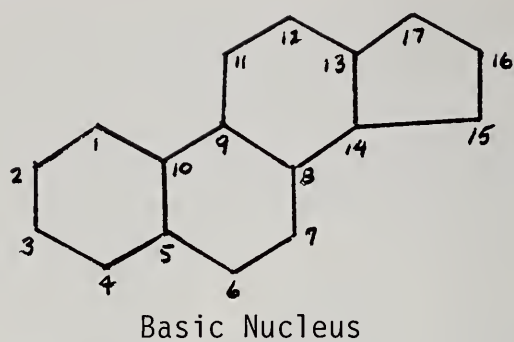
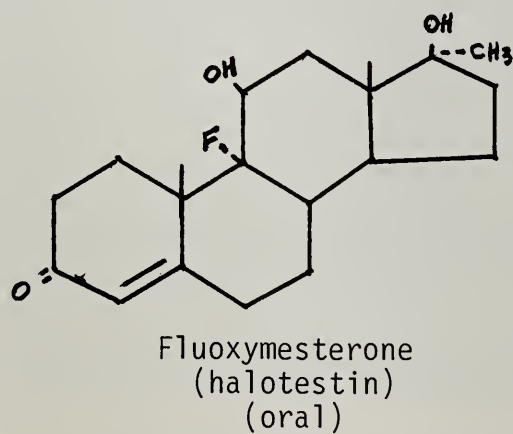
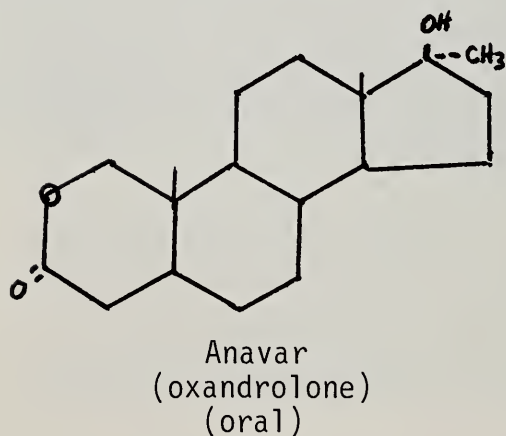
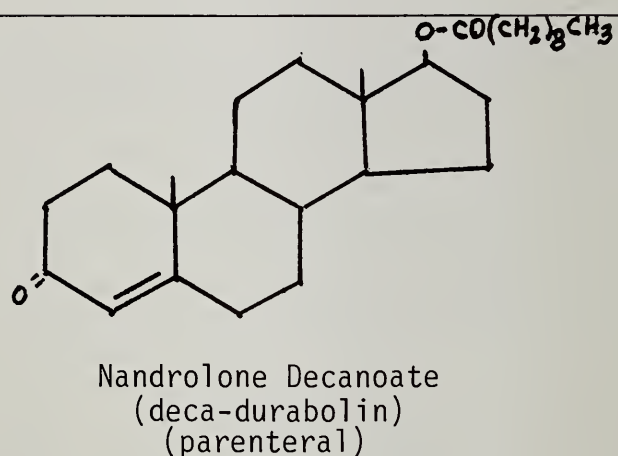
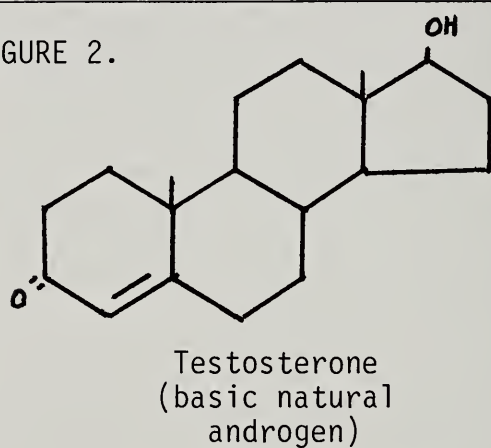


FIGURE 2.



tein in each muscle fiber, thereby adding weight (hypertrophy), but not necessarily strength.^{2, 3} It would appear that even when placebo pills are given to athletes, they often gain weight and strength. The placebo appears to induce psychological effects that help them to eat more, work harder, and feel better.⁴ Because women normally have a much lower testosterone level than men, the effect of anabolic steroid is more pronounced in women. In males, who naturally possess significant levels of testosterone, the effect is not so apparent because hypertrophy of muscle fibers can only increase so much.

Therefore, acute side effects are readily seen in the female, but are not so readily apparent in the male. In the female, these include weight gain, acne, clitoral enlargement, menstrual irregularity or cessation, voice change, breast shrinkage, hirsutism, male pattern baldness, and perhaps an increase in libido as well as infertility.⁵

Aside from the question of possible advantage given the athlete in sports events, why are physicians so reluctant to give androgens to athletes? When androgens are used in the growing child, they speed up the rate of linear growth, but unless they are given in exact proper doses, they may close the child's growth plates (epiphyses) and actually make the child a shorter adult than he was destined to be. Androgens may create or worsen acne, increase or decrease libido, add weight, cause headaches, gynecomastia, alter liver function, alter thyroid metabolism, increase aggressiveness, decrease testicular size, and cause nausea and dizziness. Chronic high doses have been associated with primary liver cancer (oral forms), hyperinsulinism, abnormal glucose tolerance leading to diabetes, and most significantly there is a strong suggestion that it leads to coronary atherosclerosis.⁶⁻⁸ Atherosclerosis may possibly result from the fact that androgens lower the high density lipoprotein cholesterol levels which are thought to be a protective factor against coronary artery disease.⁹ "Body-builders" psychosis is a new entity now thought to result from chronic excess anabolic steroids in up to 10 percent of users. They can become unusually aggressive and display symptoms of manic-depressive psychosis. These users appear to have a self image problem (i.e. the reverse of anorexia nervosa) in which they consider themselves too thin or small.

Those young athletes who ingest steroids in high doses for more than two years probably have

to look forward to congestive heart failure between the ages of 40 to 60. When muscle fibers hypertrophy to their maximum size they stretch under contraction and relaxation to their peak strength according to Starling's law, i.e. they produce maximum strength at a specific tension beyond which the strength with stretch decreases.¹ When steroids are discontinued, the muscle is hypertrophied beyond its natural state and eventually becomes weaker as the athlete decreases his exercise and activity with age. Since the cardiac muscle is the largest muscle in the body and has to work continuously, it becomes flabby and weaker with age, creating a condition which predisposes the individual to early onset of heart failure than if steroids had never been used. This is potentially the greatest hazard to chronic androgen use.

The steroid issue in athletes is most likely settled, at least for the short term. The International Olympic Committee has advised against steroid use and is now testing athletes to enforce a ban. The NCAA is also spot testing in major college events, such as the major football bowl games, and likely will eventually increase the frequency to include all college sports. Colleges will soon get the message. Alabama has taken the first step to become the first state in the U.S. to make steroid use in athletes illegal.¹⁰ In Britain, the use of androgens is now completely banned.¹⁰

Another sidelight to the abuse of steroids is the development of amyotrophic lateral sclerosis (ALS or Lou Gehrig's disease) in three (out of 40) San Francisco Forty-Niner football team members from the 1960 team. Gary Lewis and Matt Hazeltine recently died and the health of Bob Waters, the coach at Western Carolina University, is deteriorating slowly. One of the common factors involving these men is their use of steroids. Bob Waters is currently seeking to find out how many others of the 1960 team also took steroids and if they may be having symptoms. Other common factors may also be found to have a link with this disease. The usual expected incidence of ALS is 1/100,000 which makes 3/40 a highly significant finding.

The controversy regarding chronic androgen abuse continues. Double-blind testing with human volunteers is probably unethical because it takes 20 to 40 years or more to determine the final results. Therefore, we may never have a definitive answer, but the immediate solution to chronic steroid abuse in this decade is to make the

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drug illegal unless there is a specific medical indication. □

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THROMBOTIC MICROANGIOPATHIES: A REVIEW*

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M. FRANCISCO GONZALES, M.D.**

During the last ten years, the state of knowledge on the disorders caused by augmentation of the platelet-endothelial interaction, now recognized as the thrombotic microangiopathies, has been explained by the formation of platelet microthrombi (Fig. 1) resulting in obstruction of small arterioles and capillaries. These thrombi may be found in virtually any organ, but predominate in the kidney, brain, adrenals, pancreas and heart. Diffuse microvascular obstruction causes ischemic organ dysfunction, especially in the brain and kidney, as well as microangiopathic hemolytic anemia that is typical of thrombotic thrombocytopenic purpura (TTP).¹

More recently, investigators attempting to elucidate the triggering events which mediate intravascular platelet aggregation have provided new insight into the pathogenesis of the thrombotic microangiopathies and the role of the von Willebrand factor (vWf) in normal coagulation.² Additionally, these developments have clarified our understanding of the mechanisms by which various disorders other than TTP produce abnormal platelet agglutination. Therefore, it is appropriate to present at this time a brief review addressed to the primary care physician since the clinical manifestations of the thrombotic microangiopathies are being recognized more frequently, and because early treatment appears to modify the clinical course of the disease.

THE PLATELET-ENDOTHELIAL INTERACTION

It is not known whether the formation of abnormal platelet aggregates is the result of a primary endothelial cell abnormality, a primary platelet abnormality, or a simultaneous injury to both

platelets and endothelial cells. The concept that platelet aggregation is primary and the endothelial cell damage is secondary is supported by the identification of a platelet aggregation factor (PAF) in the plasma of several patients with TTP. Platelet aggregation factor induces the *in vitro* aggregation of washed platelets taken from normal donors and patients with TTP in remission. Its action does not require release of ADP, presence of extracellular calcium ions, or any generation of energy. Platelet aggregation factor is directly inhibited by another factor present in normal plasma which is called platelet-aggregating-factor inhibitor (PAFI).³ The nature of both PAF and PAFI is yet to be elucidated. One possibility is that PAFI is related to decreased prostacyclin activity (PGI₂). Other investigations have established a relationship between platelet agglutination and a recently discovered polar-lipid autacoid (alkyl, acetyl, glycerol phosphocholine) called platelet activating factor (PACF). The PACF is a mediator of inflammation, and is produced by and acts on both platelets and endothelial cells at nano-

PATHOPHYSIOLOGY OF THE THROMBOTIC MICROANGIOPATHIES

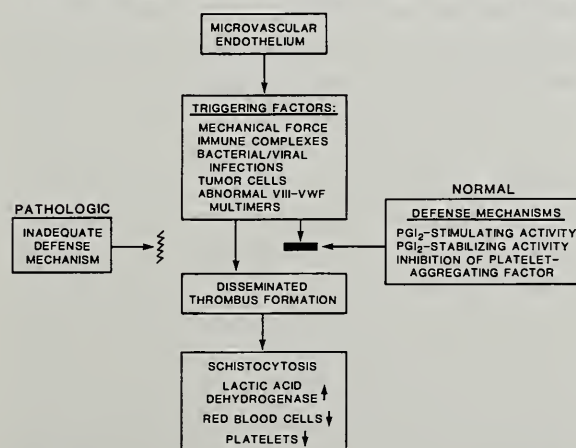


FIGURE 1. Contributing factors known to produce increased platelet-endothelial interaction, and corresponding defense mechanisms thought to be impaired in the thrombotic microangiopathies.

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molar concentrations. It may be one of the critical links in cell-to-cell interactions, thus providing a cellular and molecular mechanism for potent events by augmenting injury to the microvascular beds during inflammation.

An endothelial cell abnormality has also been postulated as the primary defect. Cytotoxic antibodies with specificity for endothelial cells have been demonstrated in the sera of some patients with TTP. Decreased levels of endothelial cell-derived PGI₂ have been shown in other TTP patients.⁴ The endothelium, in addition, has an important role in the formation of fibrin by interacting through specific receptors with thrombin and thrombomodulin. Once the thrombin-thrombomodulin complex is formed, thrombin can no longer activate fibrinogen or other coagulation proteins; however, it can activate Protein-C to become an effective anticoagulant that degrades factors Va and VIIIa. Active Protein C also stimulates fibrinolysis. Therefore, endothelial damage may precipitate unopposed local fibrin deposition and vascular occlusion.

THE VON WILLEBRAND FACTOR

Several recent investigations have focused on the possible role of vWf in the pathogenesis of these disorders. Normal human vWf has been purified by several different laboratories, and although some controversy remains, there is general agreement on the fundamental aspects of its structure.⁵ As purified *in vitro*, vWf shows the unusual characteristic of being composed of a series of macromolecules of extremely high molecular weight ($1-15 \times 10^6$ dalton). When disulfide bonds are reduced, each of these macromolecules appears to consist of a single glycoprotein subunit with molecular weight of approximately 230,000 dalton. The macromolecules thus result from the covalent association of varying numbers of these subunits via disulfide bonds. It is important to emphasize how enormous these molecules are since the largest ones are considerably larger than some virus particles. These two molecular features, large size and multiple binding sites, make the vWf an ideal bridging molecule, with regard to its platelet cofactor function. It is not surprising then that the higher molecular weight forms are able to bind to platelets at lower concentrations of ristocetin (substance used for *in vitro* testing of platelet agglutination) and are more effective in mediating ristocetin-induced platelet agglutina-

tion. Other properties of the high molecular weight form include the ability to be precipitated after the freezing and slow thawing of plasma (cryoprecipitation) and prolonged survival after injection *in vivo*. Molecular weight dependent heterogeneity is an important consideration for interpreting the results of assays based on immunologic as opposed to those based on platelet agglutination activity. Low molecular weight material is immunologically active but does not support platelet agglutination well.⁶

Von Willebrand factor is synthesized by the megakaryocytes, which are presumably responsible for its presence in the platelet alpha granule. However, most of the vWf in plasma is believed to be the product of endothelial cells. Studies of vWf biosynthesis in these cells have determined that it is initially synthesized as a substantially larger precursor or pro-vWf. Shortly after its synthesis, the pro-vWf a monomer, rapidly dimerizes to form pro-vWf dimers, the predominant intracellular form of the protein. Before secretion by the endothelial cell, pro vWf dimers undergo further posttranslational changes including glycosylation, sulfation and proteolytic cleavage, which result in formation of the array of multimers characteristically found in normal plasma. With the foregoing in mind, it will be possible to identify the sites at which alterations may result in an abnormal vWf protein and a von Willebrand disease phenotype.

Assessment of the thrombotic microangiopathies should include an analysis of the quantity and structural characteristics of plasma vWf. This can be done by three methods: (a) One-dimensional electroimmunoassay (EIA) to quantify plasma vWf antigen; (b) Two-dimensional immunoelectrophoresis (2DIEP) to determine the plasma vWf antigen pattern; and (c) Sodium dodecyl sulfate (SDS) gel electrophoresis to visualize plasma vWf multimeric size⁷ (Fig. 2).

One dimensional EIA is performed by inducing the proteins in citrated plasma to migrate under the influence of an electrical field into agarose containing monospecific antibodies directed against human vWf. Immunoprecipitation of vWf occurs in the agarose and is outlined as a rocket pattern by a protein stain. The relative heights of vWf rockets provide quantification of the vWf antigen level in patient plasma when compared to dilutions of normal pooled plasma.

Von Willebrand factor antigen patterns in

THROMBOTIC MICROANGIOPATHIES

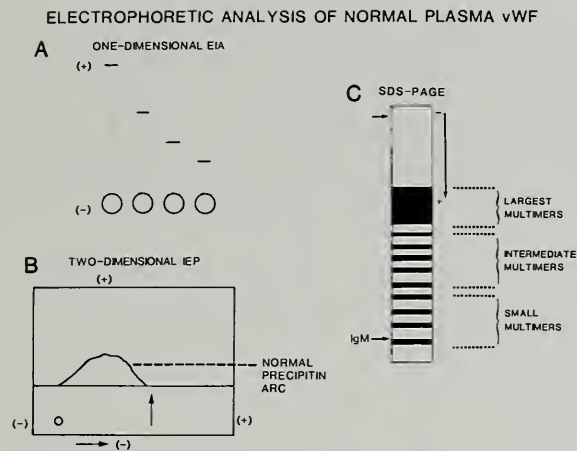


FIGURE 2. Frequent procedures utilized for the determination of the quantity and structural characteristics of plasma vWf. A: From left to right: undiluted, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$ plasma dilutions. B: Double electrical field application at 90° angle resulting in vWf precipitin arc. C: Migration of vWf multimers according to degree of disulfide bonds linkage. IgM migration shown as a reference.

plasma samples can be outlined by 2-DIEP. The proteins in plasma are separated in agarose under the influence of an electrical field in the absence of any denaturing agent. The negatively-charged plasma vWf multimer forms that are the largest migrate more slowly toward the positive pole, and the smallest vWf multimers migrate more rapidly. The electrical field is then applied again at a 90° angle from the first field. The separated plasma proteins are induced to migrate in the second dimension into agarose gel containing anti-vWf antibodies. Von Willebrand factor from normal plasma is immunoprecipitated in a broad "hump" which reflects the heterogeneous mobility of vWf forms.

More detailed analysis of the structure of plasma vWf multimers is conducted under denaturing conditions by gel slab electrophoresis and autoradiography. Plasma samples are incubated with the ionic detergent sodium dodecyl sulfate (SDS) and urea in order to disrupt the hydrogen bonds. No reducing agent is added; therefore, the disulfide bonds that link vWf monomers into multimers of various sizes are not disrupted. These multimers are then separated by electrophoresis in agarose or acrylamide-agarose gel slabs which are subsequently overlaid with radioiodinated anti-vWf antibodies. Autoradiograms are developed by taping these gel films onto X-ray films. The vWf multimers of different sizes in normal plasma are seen in a staircase pattern in the gel lanes.

In vitro, the largest plasma vWf multimers attach to externally exposed platelet membrane receptors in the presence of ristocetin, and *in vivo* they are instrumental in the formation of platelet microthrombi.

VON WILLEBRAND FACTOR IN THE PATHOGENESIS OF THE THROMBOTIC MICROANGIOPATHIES

Von Willebrand factor multimer forms that are larger than those present in normal plasma have been found in platelet-poor plasma obtained from patients with the chronic relapsing type of TTP and TTP-like syndromes during remission. The unusually large plasma vWf multimers in patient remission plasma are similar in size to the very large multimers synthesized by human endothelial cells in culture. The content of these unusually large vWf multimers in plasma decreases during TTP relapses in association with intravascular platelet agglutination and thrombocytopenia, presumably because multimers attach preferentially to platelets in the presence of some inciting cofactor. The putative vWf cofactor may be a cationic peptide or other molecule released from injured tissue or macrophages; *in vitro* it is destroyed by heating the serum to 56°C . Platelet agglutination is inhibited by EDTA and heparin, but not by aspirin, IgG, IgM or the thrombin inhibitor, dansylarginine. Addition of normal defibrinated cryoprecipitate (containing the largest plasma vWf multimeric forms) supports platelet agglutination, whereas addition of the smallest plasma vWf forms or fibronectin are devoid of such effect.⁸

The attachment of platelets to the unusually larger vWf multimeric forms *in vitro* has been studied in some detail under rigorous experimental conditions (Fig. 3). Muraminidase treated vWf multimers (asialo vWf) attach to platelets directly in the absence of ristocetin or other polycations. The attachment of asialo-vWf to the external platelet membrane surface in the region of the glycoprotein Ib molecules perturbs the platelet membrane and increases the exposure of other externally exposed platelet membrane glycoprotein, in particular the glycoprotein IIb-IIIa complex. Within this calcium-dependent complex are binding sites for fibrinogen, thrombospondin (a protein that is released from platelet α granules which probably stabilizes the interaction of fibrinogen with glycoprotein IIb-IIIa), and fibro-

THROMBOTIC MICROANGIOPATHIES

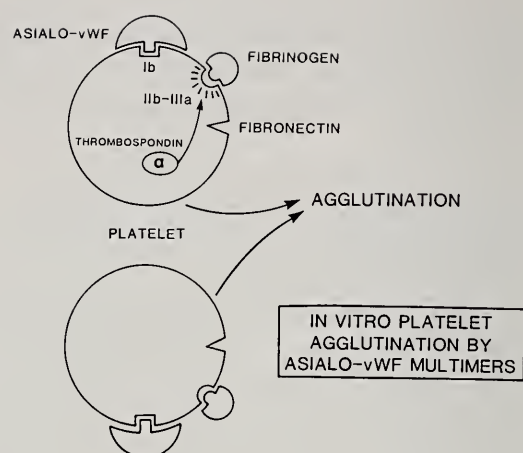


FIGURE 3. *In Vitro* platelet-platelet interaction mediated by asialo-vWf multimers.

nectin, as well as additional, lower-affinity binding sites for vWf multimers. It is the binding of fibrinogen to the platelet glycoprotein IIb-IIIa complex which occurs after the attachment of asialo-vWf forms in the region of glycoprotein Ib, that is responsible for *in vitro* platelet agglutination induced by asialo-vWf. Whether or not fibrinogen, some other protein, or protein fragment is involved along with unusually large vWf multimers in inducing platelet agglutination *in vivo* during TTP episodes will probably soon become clear.⁹

THERAPY FOR THROMBOTIC THROMBOCYTOPENIC PURPURA

It has been difficult to evaluate and compare the results of the various therapeutic maneuvers in TTP for several reasons. The disease is relatively rare and often rapidly fatal. Even in large medical centers, the experience is limited and comparison of results is complicated by the multitude of therapeutic measures frequently used. The success of any regimen is greatly dependent upon early recognition and the quality of auxiliary facilities. Furthermore, the disease may remit if the patient survives for a considerable time, and this may incorrectly be attributed to the last therapy applied. As with other disorders, apparent successes are more likely to be published than are failures.

The first report of the effectiveness of exchange transfusion in TTP was published by Rubinstein in 1959. In 1976, Bukowski et al reported their 13 years experience in the management of TTP with

exchange transfusions, which resulted in complete remission in nine of 15 patients. Frequently, a dramatic improvement was noted shortly after exchange transfusion. Bokowski subsequently described two patients who recovered after intensive plasmapheresis, and other similar reports followed.

It was discovered, however, that plasma infusions (FFP) alone were effective in treating some patients with TTP, and during the 1970's FFP, outdated plasma, and cryosupernatant were all found to be successful in preventing or reversing relapses. Currently, it is recommended that therapy for TTP should start with the infusion of FFP, which should be as rapid as cardiovascular and renal function permit. The initial goal should be to infuse the equivalent of the plasma volume during the first 24 hours. Plasma infusion should be continued at the rate of one plasma volume per day until improvement is noted. Often volume considerations dictate the necessity for concurrent plasmapheresis. A rising platelet count is generally accompanied by reversal of the manifestation of organ ischemia. However, stabilization of the clinical course may occur without a substantial rise in platelets. Reversal of organ dysfunction often occurs with effective therapy; however, if infarction has occurred, one can only seek to prevent further damage. An excellent parameter of ischemic tissue damage is the serum lactic dehydrogenase, which reflects both ongoing hemolysis and lysis of other tissue cells.¹⁰ The treatment of TTP should be continued until remission is obtained by normalization of the renal and hematological parameters (Table I).

TABLE I. TTP: CRITERIA FOR COMPLETE RESPONSE

- (1). Normal platelet count
- (2). Hemoglobin over 12 gm/dl
- (3). Normal peripheral smear
- (4). Clearing of neurologic symptoms

Patients with cancer associated TTP are approached in a different manner. This rare entity develops in patients with gastrointestinal adenocarcinoma treated with Mitomycin C-based chemotherapy, and whose tumor is either in complete remission or with minimal or recurrent disease. The pathophysiology of the thrombotic

microangiopathy is related to the presence of medium size circulating immune complexes with substantial platelet aggregatory activity. Plasma perfusion (immunoperfusion) over filters containing staphylococcal protein A (SPA) used in this situation has resulted in a significant rise in circulating platelets and erythrocytes with stabilization of progressive renal failure.

Glucocorticoids may be initiated after diagnosis, in a dosage equivalent to prednisone at 1-2 mg/kg/day. The beneficial effect on TTP would be related to a decreased production of an autoantibody that prevents the conversion of unusually large vWf multimeric forms to the somewhat smaller forms normally present in circulation.

Aspirin, dipyridamole, dextran, and sulphinpyrazone have been used in different combinations. No firm conclusions can be established about their effectiveness since other concurrent therapeutic modalities were often used. Furthermore, some observations suggest that platelet transfusions and platelet function inhibitors may actually increase the risk of serious bleeding complications.

Splenectomy may be attempted if other measures are inadequate. Clinical responses have been observed within one day after surgery with full neurological recovery over a three-week period. The remission plasma contained unusually large vWf multimer forms supporting the concept that a subgroup of patients with TTP may exist in which the pathophysiology of the disease is significantly modulated by the spleen.

Chemotherapy with vincristine or other agents may terminate the plasma requirement and should be considered in protracted cases. There is no established role for PGI₂ infusion which has been used mostly without benefit in the treatment of TTP. Compounds capable of impeding the interaction of platelets with vWf multimers (including the large vWf forms derived from endothelial cells) may prove to have therapeutic effectiveness in TTP. Among the compounds of potential interest yet to be evaluated are those

which impair platelet-vWf interaction to a modest extent (penicillin-G and carbenicillin) and those which inhibit cation-induced vWf-mediated platelet agglutination *in vitro* (vancomycin and modified forms of Evans blue).

During the last decade, our knowledge about the pathophysiology of TTP has evolved from the mere histological documentation of target-organ damage, to the *in-vitro* demonstration of the complex structure of the vWf and its interaction with plasma cofactors and the endothelium. Although the clinical presentation of classic TTP was a rare phenomenon encountered in community hospitals ten years ago, the primary-care physician should be aware of the increasing incidence of platelet-endothelial interaction abnormalities which are now being identified in inflammatory and neoplastic disorders. □

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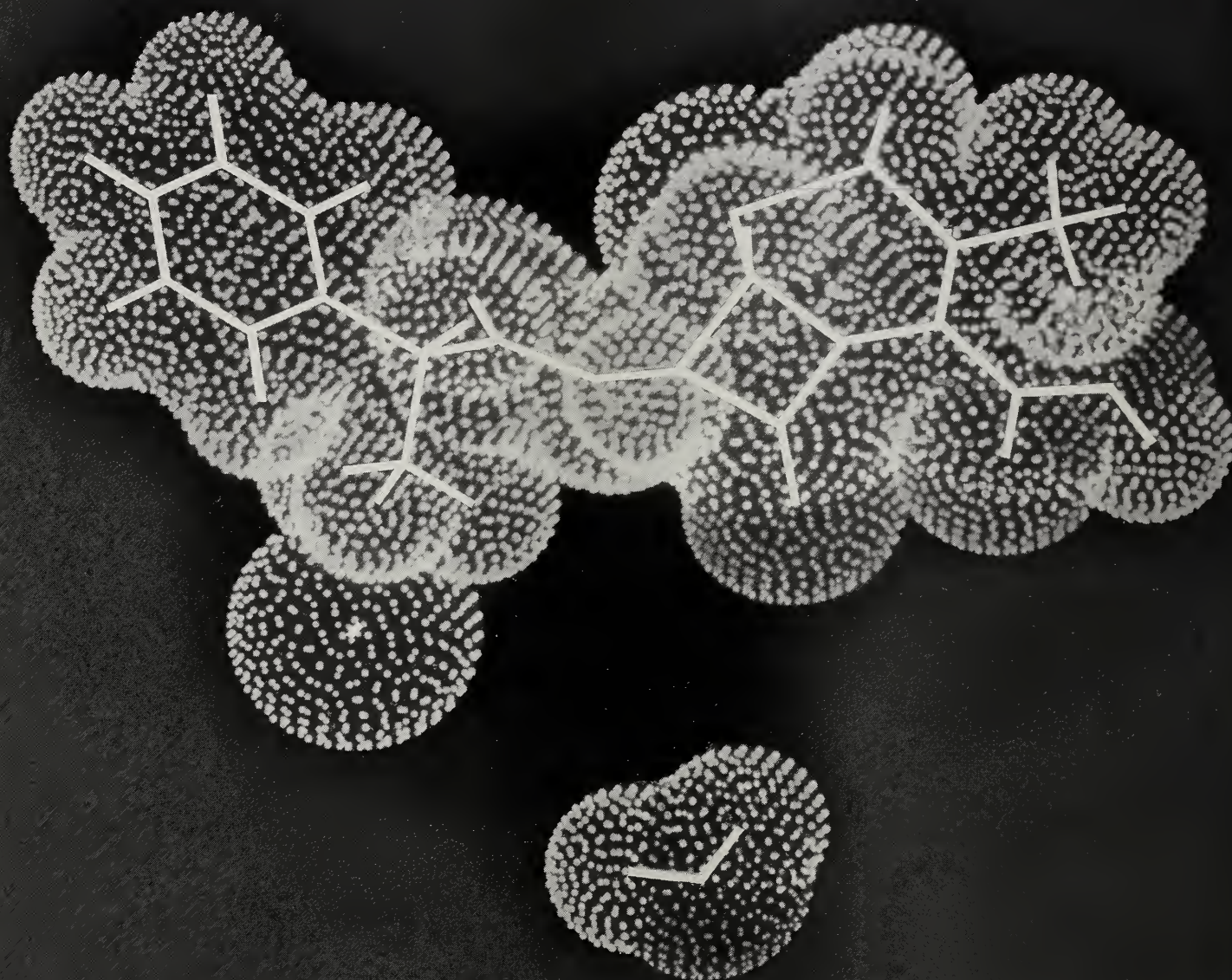
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COST EFFECTIVE SHOPPING FOR PRESCRIPTION DRUGS

LANCE A. DUVALL, M.D.*

TERESA A. CAMPBELL, M.D.**

Interest in the issue of generic drugs has increased since the enactment of the Drug Price Competition and Patent Term Restoration Act of 1984. An estimated 150 new generics will be available as a result of this legislation. While much of the debate on generic drugs has focused on the issues of safety and efficacy, there has also been debate on the reputed savings available through wider use of generic prescribing. Bloom, et al.¹ studied 891,862 prescriptions written for 21 pairs of branded and generic drugs dispensed in 1,363 pharmacies in 39 states during a three-month period in 1984. They concluded that the consumer could not be guaranteed the lowest cost simply by purchasing generic drugs. Their report has been criticized in several letters to the editor.² In reply to these criticisms, Bloom acknowledged that they did not know how the prescriptions were written (brand name or generic), only how they were filled. They also noted that the comparative shopping necessary to obtain the best possible price also costs the consumer in time or money.

We chose to examine two questions in our study. Are pharmacies willing to give the consumer a price quotation for a prescription via telephone? If they are generally willing to do so, the consumer's cost of determining the best price is greatly reduced. We also sought to determine how often the consumer would be given the option of having a generic drug substituted for the brand name product when the pharmacy was presented with a prescription written for the brand name but with substitution permitted by the prescribing physician.

STUDY DESIGN

All pharmacies in the local telephone area of Georgetown, S. C., were included in the study.

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One pharmacy (C3) was aware of the study from its inception and was excluded from portions of the study. The drug price information from this pharmacy was included since it was accurately known. In the initial phase, one of the authors (T.C., who was not known to the pharmacists) called each pharmacy on a weekday between the hours of noon and 2:00 p.m. and asked the price for one hundred tablets of Inderal 80 mg. Then the price for the generic product was requested. When the quoted price appeared unusually low, a purchase of the drug was made to ensure the validity of the price.

In the second phase of the study, one of the authors (T.C.) went to each of the pharmacies with a prescription for 56 tablets of Parafon Forte with substitution of the generic product permitted. The prescription was handed to the pharmacy staff. If the pharmacy offered to substitute the generic form, this was allowed; and the price of the branded product was determined at the time of purchase of the generic product. If the pharmacist filled the prescription with the branded product, the purchaser requested that it be filled with the generic product. Only if the generic product was unavailable was the branded product purchased. In every instance, the price to the consumer of the brand name and of the generic product, if available, was obtained at the pharmacy at the time of purchase. Pertinent details of the transaction were recorded immediately after the purchase. Afterwards, the number of tablets in each bottle and the identity of the branded products were verified.

The pharmacies were divided into three groups. The first four (A1, A2, B1, B2) are each members of large chain pharmacies. The next six (denoted by C) are members of the Carolina Pharmacy Network (CPN), an affiliation of independent pharmacies which negotiate wholesale drug purchases and other common concerns as a group. The last five pharmacies (denoted by D) are independents, not known to belong to any group.

COST EFFECTIVE DRUG SHOPPING

purchasing organization. The cost of the drugs to CPN members was known, but the cost to the remaining pharmacies was not determined. The possibility that a pharmacy in the CPN may have purchased one of the study drugs at a lower cost from another source could not be excluded.

RESULTS

All of the pharmacies readily provided a price quotation on the phone for Inderal and its generic, if available. The written prescription for the second drug was presented to 14 pharmacies. In nine (64 percent) of these, the pharmacist inquired whether or not the purchaser wanted the generic product substituted. In one instance, the pharmacist used the branded product but refilled the prescription with the generic product upon the purchaser's request. In two instances, the purchaser was told that a generic version did not exist; and one pharmacy said that they did not carry the generic product. The last pharmacy said that they did not have the generic product in stock but could have it by the next day, and they provided a price quote for the generic. Thus, the generic product was immediately available in ten of 14 (71 percent) pharmacies.

There was a wide range of consumer cost for the two drugs. We defined the range of the cost of a drug as the difference between the highest and lowest costs, divided by the lowest cost, with the result expressed as a percentage. The following results were obtained.

Brand name Inderal varied 71 percent; generic propranolol 240 percent; brand name Parafon Forte 29 percent; and generic chlorzoxazone/acetaminophen 188 percent. The range between mean prices for Inderal and its generic counterpart was 103 percent. Similarly, the range of mean prices for Parafon Forte and its generic was 164 percent.

The difference in mean price for the same product between the pharmacy groups appeared large in some instances, but it never reached statistical significance at the 0.05 level using the standard t-test.

One unexpected finding was the discrepancies in pill count and the inaccurate information provided to the purchaser in some pharmacies. In two instances, less than the stated number of tablets was dispensed, inflating the actual price per tablet. In one instance, the pharmacy dispensed one-half of the prescribed number of tablets with a

proportional decrease in the price. However, the purchaser was not informed that only half of the number of tablets was being provided. In two cases the consumer was told that a generic formulation did not exist, not that it was unavailable. Therefore, in 17 direct contacts with pharmacies there were five instances of what could be construed as errors in dispensing either information or medication. This represents a 29 percent incidence of "errors," but was limited to three of the 14 pharmacies, none of which were chain pharmacies.

DISCUSSION

All of the pharmacies were willing to respond to a telephone request for a price quote on one prescription. Whether they would be willing to provide this information for a larger number of prescriptions was not examined. Financial constraints prevented the authors from verifying the accuracy of all telephone price quotations. Of the four purchases made to verify a "bargain" price, there was only one for which the actual purchase price was not below the mean price for all pharmacies. In one instance there was a substantial difference between the quoted price and the actual cost, but the cost was still substantially below the mean price. Consumers in the study area could reasonably expect to save money by shopping by phone for the best price for either the branded or generic drug, but should be prepared to refuse to complete a purchase if the actual cost is substantially above the quoted cost.

The majority of pharmacists did ask if the consumer wanted the generic product substituted. The wide range of cost for both the branded and generic products, with the branded product having less variation in cost, is similar to the report of Bloom et al.

The inaccurate telephone price quotations, the errors in tablet count, and the erroneous information provided in some pharmacies was unexpected. This may represent a random fluctuation associated with a relatively small sample of pharmacies. Hopefully, this result would not be reproduced in a similar study involving a larger number of pharmacies.

The authors recognize that the consumer may often be willing to accept higher costs for drugs in exchange for other benefits such as free home delivery, charge accounts, and pharmacist on call

COST EFFECTIVE DRUG SHOPPING

TABLE 1 DRUG COST (cents/tablet with mean cost (\bar{x}) and standard deviation (σ) for each pharmacy group)

	Inderal	Propanolol	Parafon Forte	Chlorzoxazone/ Acetaminophen
A1	45.8	26.3	44.4	14.1
A2	48.2	24.3	44.6	15.9
B1	40.0	22.9	41.3	11.9
B2	40.0	22.9	41.3	11.9
<hr/>				
\bar{x}	43.5	24.1	43.0	13.5
σ	3.6	1.4	1.5	1.7
<hr/>				
C1	56.4	29.5	42.4	not carried
C2	42.3	21.4	41.1	9.6
C3	44.0	24.0	41.5	22.3
C4	43.3	9.8	42.4	9.8
C5	41.2	33.2	41.0	not carried
C6	45.8	19.5	47.9	28.3
<hr/>				
\bar{x}	45.5	22.9	42.7	17.5
σ	5.1	7.5	2.4	8.1
<hr/>				
D1	48.0	21.0	52.9	not carried
D2	45.0	16.0	48.1	21.3
D3	41.5	not carried	41.6	25.0
D4	45.0	10.9	49.8	11.2
D5	32.9	not carried	42.1	not carried
<hr/>				
\bar{x}	42.5	16.0	46.9	19.5
σ	5.2	4.1	4.4	6.2

TABLE II—COMPARATIVE SHOPPING HINTS FOR CONSUMERS

1. Phone all local pharmacies to obtain prescription price quotations. Limit queries to one or two prescriptions and call during less busy times (e.g. 1 p.m.-2 p.m.).
2. Provide the pharmacy with all pertinent information (drug name, dosage strength, amount to be dispensed, and whether or not a generic form is desired).
3. At the time of each call record the price quotation and the name of the person who provided it along with the name of the pharmacy.
4. If the cost at time of purchase is not the same as the quoted price, confront the pharmacy with the discrepancy. If the pharmacy refuses to adjust the cost, try the next pharmacy on your list.
5. After the purchase is complete, count the number of tablets or pills to make certain the correct number was dispensed.

after regular business hours. The availability of these services was not examined.

SUMMARY

A study involving 16 pharmacies provided the following conclusions. The consumers can generally obtain reliable drug price information by phone from pharmacies. The majority of pharmacies did ask the consumer whether or not a generic substitution was desired. A surprisingly high rate (29 percent) of pharmacy errors was noted but was confined to a small number of pharmacies. The cost for the same drugs varied widely between pharmacies, and the variation was greater for the generic products. Large chain pharmacies had less variation in their prices, always had the generic formulations available, and did not have any instances of dispensing errors. The study did not suggest any consistent cost savings for the consumer who uses only the large chain pharmacies. The chain pharmacies always asked if a generic product was desired. The highest and lowest costs were found in the independent pharmacies, reinforcing the potential effectiveness of comparative cost shopping by telephone. An outline of suggestions for the consumer seeking the best cost is found in Table II. □

ACKNOWLEDGEMENT

The authors wish to express their appreciation to Sandra Philpott for her assistance in preparing the manuscript. The financial assistance of Waccamaw Family Practice Associates is likewise gratefully acknowledged.

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INDICATIONS AND USAGE: BECAUSE OF REPORTS OF INTESTINAL AND GASTRIC ULCERATION AND BLEEDING WITH SLOW-RELEASE POTASSIUM CHLORIDE PREPARATIONS, THESE DRUGS SHOULD BE RESERVED FOR THOSE PATIENTS WHO CANNOT TOLERATE OR REFUSE TO TAKE LIQUID OR EFFERVESCENT POTASSIUM PREPARATIONS OR FOR PATIENTS IN WHOM THERE IS A PROBLEM OF COMPLIANCE WITH THESE PREPARATIONS.

1. For therapeutic use in patients with hypokalemia with or without metabolic alkalosis, in digitalis intoxication and in patients with hypokalemic familial periodic paralysis.

2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS**, **WARNINGS**, and **OVERDOSAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 mEq/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.
3. Correction of acidosis, if present, with intravenous sodium bicarbonate.
4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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HEMICORPORECTOMY: THE CONTRIBUTION OF FREDERICK E. KREDEL

BERNARD E. FERRARA, M.D.*

Hemicorporectomy or lumbosacral amputation is an operation which is infrequently performed. By 1973, only 18 cases had been reported in the World Literature.¹ It is mutilating in the extreme since it halves the body at its mid portion. The first report of the operation was by Kennedy et al in 1960.² That operation was performed upon an individual suffering from locally invasive carcinoma of the rectum with perineal ulceration and unremitting pain. The authors consulted with Dr. Alexander Bruchwig and, with his advice and encouragement, undertook this historic achievement. There is no bibliography appended to the Kennedy paper. These authors state that in 1948 the concept of the operation was suggested by them as a therapeutic modality to other physicians involved in treating a patient with extensive locally invasive carcinoma of the cervix. But an operation of such magnitude was rejected by these physicians, who elected not to inform the patient of this alternative. Subsequent authors have accorded Kennedy attribution for the procedure, since his was the first clinical case recorded.

Historically, the concept of the operation was first enunciated by Frederick E. Kredel of Charleston, South Carolina, at the Society of University Surgeons' Meeting in Durham, North Carolina in 1950. Dr. Kredel described the procedure in discussing the presentation of Bricker and Modlin, "The Role of Pelvic Evisceration in Surgery."³

The following exchange is recorded on page 94 of the July 1951 issue of *Surgery*. "DR. FREDERICK E. KREDEL.—I wish to propose in all seriousness that pelvic evisceration is not necessarily the most radical operation you can conceive. Even if there may be fixation in the pelvis, involvement of the external iliacs or inguinal regions, there is still the theoretical possibility of operative removal by pelvic amputation, simply a half-ectomy. Secure the terminal aorta and vena cava

and the rest of the operation would be relatively simple. Simply divide the vertebral column, secure the dura, and what not."

"May I have that slide, please? It is a horrible thought to be sure, but I have done this suprapelvic amputation on a cadaver and that would be the result. I believe you could fit a prosthesis on this and make a decent living individual. It was a disappointment, though, when we put radioactive phosphorus in the embalming fluid in this cadaver, that the circulation in those flaps was rather poor. So you'd probably have to do this in two stages."

"DR EUGENE BRICKER (Closing).—I wish to thank the discussors. I am glad that the procedure described by Dr. Kredel has finally been brought to light. It was inevitable that the gruesome possibility would occur to others, as it occurred to me. I have been afraid to mention it in public for fear of being taken seriously."

Dr. Kredel established the feasibility of hemi-corporectomy, or halfectomy as he referred to it, by laboratory dissections on cadavers. In his lifetime, he never performed the operation upon a living person. In 1951, an individual with extensive local pelvic cancer had the first stage of a contemplated two-stage halfectomy. A colostomy and urinary diversion were done initially, but the patient declined further surgery. In Charleston, South Carolina, the operation has been accomplished on two occasions, and one experience from the Department of Surgery at the Medical University of South Carolina has been reported.⁴ It is of interest that this report, originating from the Surgery Department that he headed in life, and published some five years after Dr. Kredel's death, does not refer to Dr. Kredel's attribution in 1950.

Dr. Frederick E. Kredel was the first full-time Professor of Surgery at the Medical College of South Carolina (now the Medical University of South Carolina), serving in that capacity from 1939 until his death in 1961. He was a Charter Member of The Society of University Surgeons,

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HEMICORPORECTOMY

and served on the Membership Committee, as Treasurer, and as Chairman of the Executive Committee. He had served on The Board of Governors of the American College of Surgeons, and was a member of the Motion Picture Committee. Dr. Kredel has been recognized for two other significant contributions.

Dr. Harvey Cushing,⁵ in a letter to Dr. Kredel in 1937, accorded him a first for his seminal work on tissue culture of brain tumors.^{6, 7} This was corroborated by Dr. Dorothy Russell.⁸ His attempt to establish collateral circulation to ischemic brain by temporal myopexy was reported in 1942.⁹ This has been recognized as the first clinical attempt to establish encephalomyosynangioses in the brain.^{10, 11}

The literature on hemicorporectomy accords Dr. Kennedy of Detroit attribution for the operation which he first performed in February 1960. Dr. Kredel's discussion of Dr. Bricker's papers in 1950 was the first documentation to establish the concept of hemicorporectomy as a functional reality, and it is the first recorded allusion to halfectomy. We have a firm conviction that Dr. Kredel had discussed the procedure and his dissections with Dr. A. Brunchwig with whom he maintained a close personal and professional interest. It is fitting that Dr. Frederick E. Kredel should be recognized for establishing the concept of hemicorporectomy some 10 years before it became a clinical reality.

In 1966, in his discussion of a paper on hemicorporectomy, Bricker cited Kredel's original description of the procedure in 1950.¹² Henry Royster in 1963, discussing Ravitch's presentation of hemipelvicectomy, alluded to Dr. Kredel's description on "halfectomy" in 1950 at Durham, North Carolina.¹³

In 1985, Aust, recalling the latter incident, attributes the original demonstration of the operation of hemicorporectomy to Dr. Kredel. This is

the first such reference in the formal surgical literature; and it came 35 years after the fact.¹⁴

Although Dr. Kredel envisioned the operation as a curative procedure for locally advanced pelvic and lower body cancer, when other treatments had been tried and failed, indications for hemicorporectomy have been extended. The operation has been useful in treating severe crushing trauma to the pelvis and lower extremities; intractable decubitus ulcers with malignant degenerations, particularly in paraplegics, and in pelvic organ and bone infections which have non-healing fistulae. □

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THE INTERIM MEETING OF THE AMA HOUSE OF DELEGATES DECEMBER 4-9, 1987, ATLANTA, GEORGIA REPORT OF THE SCMA DELEGATION

JOHN C. HAWK, JR., M.D.*

The proximity of Atlanta, Georgia, the site of the 1987 Interim Meeting of the AMA House of Delegates, afforded the opportunity for the SCMA to send the largest delegation in recent memory, and probably ever. The regular members of the delegation consisted of Don Kilgore, Randy Smoak, and John Hawk, Delegates; Ken Owens, Gavin Appleby, and Charles Duncan, Alternate Delegates; Dan Brake, Chairman of the Board; Tommy Rowland, President-Elect; and Carol Nichols, Secretary. Other Board of Trustees members attending, some for the first time, included Ed Catalano, Ned Nicholson, Terry Dodge, Marion Burton, and Walt Roberts.

In addition, Roger Gaddy and Jim Lindsey (also a Board member) attended as Delegate and Alternate Delegate to the Young Physicians Section, and John Eberle, Jim Eberle, Terry Norton and Judd Gash, medical students from School of Medicine, USC, and Dave Sherbert from MUSC, attended the student meetings and some of the House of Delegates' activities. Mark Newberry, Vice-President for Academic Affairs of MUSC, was present for much of the meeting, and participated actively in our caucuses.

All available delegation members attended breakfast caucuses of our own delegation on Monday, Tuesday and Wednesday, and the southeastern delegation caucus on Sunday. The additional, as well as the regular members, attended and reported on Reference Committees, as assigned. It was the consensus that we had a very productive meeting and that those attending for the first time obtained a real insight into the varied activities of the AMA and came to an appreciation of the amount of work that is done at meetings of the House of Delegates.

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HOUSE OF DELEGATES

The House of Delegates was the largest ever. A total of 411 delegates were seated, including five new specialty societies admitted during the meeting: American Rheumatism Association; American Association of Electromyography and Electrodiagnosis; American Society for Dermatologic Surgery, Inc.; American Society of Clinical Oncology; and American Society of Maxillofacial Surgery.

It is noteworthy that despite the addition of new national specialty society delegates, the House composition is primarily that of state medical associations of which there are 327 delegates. The national specialty society delegates number 74 and there are ten Section and Service delegates.

PRESIDENT'S ADDRESS

Dr. William S. Hotchkiss, AMA President, in his address to the House, outlined two major challenges facing the profession—maintaining unity in the profession, and ensuring professional autonomy in decision making. He discussed the emphasis of the AMA to work closely with specialty societies in a concerted effort to help physicians maintain control over patient care.

To me the most interesting observation by Dr. Hotchkiss came later when he stated that he had tried to analyze the purposes of 204 items of business before the House of Delegates.

Of these 204, only 28 (13.7%) were primarily for the benefit of physicians, while 110 items, (54%) were primarily of benefit to "people," namely our patients. In addition there were 23 items which would benefit both "people" and physicians (11.2%), and 43 (21%) which he could not classify. He cited this as evidence of the clear concern of the AMA for the patients whom we serve, and for the population as a whole.

AIDS

The subject of AIDS was clearly of major importance to the delegates. On Saturday afternoon, the Forum for Medical Affairs was devoted to the topic "AIDS-Private Rights vs. Public Rights." There were several outstanding speakers, presenting quite different and even contrasting views, including Dr. Bruce Wilbur, a vascular surgeon who had developed his own program for protecting himself and his surgical team; Representative David R. Obey, a member of the Subcommittee on Labor, Health and Human Services of the House Appropriations Committee; Joseph F. Lisa, member of the New York City Council; and Dr. Robert Gleason, medical director of Northwestern Mutual Life Insurance Company.

The Council on Ethical and Judicial Affairs brought in a report to provide ethical guidelines to physicians on three significant issues related to the AIDS epidemic:

1. A physician may not ethically refuse to treat a patient *solely* because the patient is serum positive.
2. Where there is no statute that mandates or prohibits the reporting of serum positive individuals to public health authorities, and a physician knows that a serum positive patient is endangering a third party, the physician should (a.) attempt to persuade the infected patient to cease; (b.) if persuasion fails, notify the authorities; (c.) if the authorities take no action, notify the endangered party.
3. A physician who knows that he or she has an infectious disease should not engage in any activity which creates a risk of transmission of the disease to others.

This report was discussed, but in accordance with established AMA procedure, could not be changed by the House. The appropriate action of *filing* the report was utilized.

A Board report described the AMA activities in response to the growing AIDS crisis. These cover a wide range, including the following:

- Publication and distribution of 11 informational reports on AIDS to 370,000 physicians.
- Regional AIDS health education programs conducted in Pennsylvania, Texas, California, and Illinois.
- A national conference on "AIDS and Public Policy: A Community Response" which was held in April and attended by 800.

- Another national conference planned for March 1988, and a video clinic on "AIDS in the Work Place," now under development.
- Through the judicial process, the AMA has continued to exercise leadership in protecting patients with AIDS from unreasoned discrimination based on their medical problem.
- A number of other educational activities were reported, including cooperation with the CDC in the development of informational brochures for the public, public service announcements and radio programming.

The House approved a report, submitted by the AMA Council on Scientific Affairs, recommending AMA support for a varied program of AIDS education and including increased funding by the federal government for prevention and education, in accordance with public health service projections of the incidence of HIV-related disease.

Resolution 41 from the American Association of Public Health physicians asked the AMA to recommend that all federal and state prisoners *not* be subjected to mandatory HIV testing upon entering the penal facility, and that the AMA submit a report on HIV testing for prisoners at each annual meeting of the House of Delegates. This was discussed at length in the Reference Committee, and this committee recommended referral to the Board of Trustees. Despite a motion by New Jersey to *not* adopt the resolution, instead of just referring it, referral was passed.

PROFESSIONAL LIABILITY

Continuing concern about professional liability problems was quite evident at the meeting.

The House adopted a Comprehensive Report prepared by the AMA Special Task Force on Professional Liability and Insurance and the AMA's Advisory Panel on Professional Liability. This report described recent federal activity in this area and also some of the recently developed alternatives to the civil justice system. Risk retention groups, procedural based insurance rating plans, and the availability of liability insurance for directors and officers were included in the report.

The House also approved a number of resolutions on this subject including the following:

- A resolution calling upon the AMA to compile a report of state tort reforms that have

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been overturned by the courts in the past 15 years.

- A resolution calling on the AMA to support and commend the efforts of the Florida Medical Association in seeking enactment of an alternative mechanism to the current tort reform system for resolving medical liability disputes. This is called the "Medical Incident Compensation Act" (MICA). This resolution also asks that the AMA carefully evaluate MICA along with *other* tort reform measures.
- A resolution calling on the AMA to seek the cooperation of state medical associations and consumer groups to procure the enactment of legislation which will limit lawyers' contingent fees to a reasonable percentage of the net recovery.

PHYSICIAN REIMBURSEMENT UNDER MEDICARE

There were several reports and numerous resolutions which addressed the continuing and perhaps increasing problems which physicians over the entire country are having with the administration of the Medicare program. Report QQ from the Board of Trustees not only provided an update on the current status of the Medicare physician payment issue but also detailed the intensive AMA activities in this area.

The House approved a resolution that calls on the AMA "to reaffirm to the public the principle that payment schedules adopted by third party payors shall be construed as schedules of benefits to their covered insureds except in cases where physicians have voluntarily contracted with the insurer to accept those benefits as payment in full for services rendered, or as required by law."

The House adopted a resolution which asks the AMA to aid and encourage individual state medical associations to develop *voluntary* Medicare assignment programs which will assist in the protection of financial resources of the elderly of limited means and which will thus ensure access to health care for all of the elderly. Such a program has already been placed into action in South Carolina in the "Personal Care" program.

The House approved a resolution directing the AMA Board of Trustees to continue to actively oppose, through appropriate political and legal means, any and all actions by any governmental agency or legislative body which would require mandatory acceptance of Medicare assignment

and that all concerned physicians be encouraged to join with the AMA in the active opposition to such oppressive action.

The complexities and the manifest inequities in Medicare's Maximum Allowable Actual Charge program stimulated a number of resolutions and considerable debate.

The House approved policy to:

- seek legislation to eliminate unfair fee distortions created by the current MAAC implementations.
- exert every effort to prevent physicians from being penalized, persecuted, or prosecuted for unintentional possible MAAC violations.
- relieve physicians of the inequitable MAAC provisions.
- eliminate the artificial and misleading categorization of physicians as "participating" or "nonparticipating."
- seek to correct MAAC discrimination against young physicians.
- oppose efforts by commercial carriers or the federal government which would require physicians to predict reimbursement for services rendered.
- work for repeal of the provision of the Omnibus Budget Reconciliation Act of 1986 regarding notification of patients receiving elective surgery of the physician charge and the amount the patient would be expected to pay when the charge is \$500 or more and the claim is not accepted on an assigned basis.
- work to repeal provisions that require physicians to refund payments associated with Medicare services that are deemed medically unnecessary by HCFA after the fact.
- communicate to the federal government that:
 1. increases in Medicare reimbursement need to be universal.
 2. current reimbursement needs to be adjusted.
 3. discrimination in schedules between participating and nonparticipating physicians should be ended.

PRO'S

A status report on the current PRO program and on the activities of the Ad Hoc Committee on PRO was studied by the House. According to this report, there has been significant progress in working with HCFA as well as with the Congress

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on PRO concerns. It was apparent in discussions that physicians in some states are relatively well pleased with the PRO program and are not having the many problems which physicians in South Carolina have encountered. However, the House was sufficiently concerned to take a number of actions to seek redress of problem areas in the PRO program. The AMA was asked to:

- challenge both the PRO's and HCFA publicly and politically, to develop a program that honestly promotes high quality and the delivery of efficient medical care.
- take appropriate steps to assure that the PRO statutes as now written and implemented through HCFA guidelines reflect the community standards for high quality care.
- call upon Congress and HCFA to assure sufficient funding for programs to inform patients and physicians concerning the actions of PRO's.
- urge that peer review organization review be extended to all care rendered in government-managed hospitals and systems.
- work to eliminate the bounty system in the Office of HHS Inspector General which provides employees with bonuses based on the number of sanctions imposed and penalties recovered.
- take appropriate steps to assure that physicians have early input in the PRO complaint process and receive appropriate due process review opportunities prior to any report being sent to the patient regarding the quality of care provided.

PRESIDENT PHYSICIAN WORKING HOURS

Report C of the Council on Medical Education and two resolutions addressed the problems of long working hours, stress, and supervision of resident programs. The Council report set up ten guiding principles on these issues. In addition, the Reference Committee proposed and the House adopted the following:

Principle 11: Individual resident compensation and benefits must not be compromised or decreased as a result of these recommended changes in the graduate medical education system.

These 11 guiding principles will be available to all residency programs.

SUPPLY OF NURSING PERSONNEL

Board of Trustees Report CC gave detailed data about changes in nursing education during the past quarter century, and also a variety of reasons for the current critical need for more bedside care personnel. The report called for incentives which will effectively help recruit, retain, and encourage the continuing formal education of skilled personnel who will work at the bedside in hospitals and in other areas for patient care. This report is of importance to all practicing physicians and you are encouraged to read it and study its recommendations.

INFORMATIONAL ITEMS

The AMA budget for fiscal 1988 anticipates operating revenues of \$165,870,000 and operating expenses of \$163,090,000.

Report SS gave membership data as of October 31, 1987. The total dues paying 1987 membership was 16,730 members (7.0%) above the same period in 1986. The dues paying members are now greater than at any other point in the Association's history. There was also an increase in house staff membership of 9.8% and student membership of 6.1%. These obviously represent a further opportunity for regular membership gains.

OTHER IMPORTANT ITEMS

Resolution 84 from Alabama was amended and adopted to read: "That the American Medical Association firmly oppose the imposition of federally mandated restrictions on the ability of individual states to determine the qualifications of physician candidates for licensure by endorsement."

A status report from the Board of Trustees on the Harvard-AMA Relative Value Study provoked considerable discussion and evoked several resolutions which were referred for action:

One resolution asks the Board to develop criteria by which the RVS could be evaluated, seeking input from various nationally specialty organizations. The Board was also asked to develop recommendations for implementation of the RVS, assuming acceptance by the AMA, to include both specific methodology and time to achieve full realignment.

There were many other issues of importance. All physicians are encouraged to study in detail

the reports in the *AM News* of December 18th.

The South Carolina Delegation introduced a resolution in memory of Thomas A. Parker, M.D., who served as Alternate Delegate from the SCMA to the AMA from 1965 to 1969 and as Delegate from 1969 to 1975.

CONCLUSION

The members of your delegation again express appreciation for the opportunity of representing you, the members of the association. We welcome your input—resolutions, suggestions, criticisms. It is only if we hear from you that we can represent you fully.

We repeat again our invitation for you to attend meetings of the House of Delegates, present your opinions at Reference Committees, and provide input to your delegation at our caucuses. □

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"High Quadriplegia— The Ultimate Challenge"

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High Quadriplegia Program

A medical symposium addressing the acute and rehabilitative care of the C-1 through C-4 high quadriplegic. Hosted by Shepherd Spinal Center in Atlanta, now the nation's largest dedicated spinal cord injury hospital. Issues to be investigated include: medical, psychosocial and high tech approaches to care and rehabilitation. Special emphasis on ventilator weaning, the interdisciplinary care approach, phrenic nerve pacer implants and community reintegration.

Symposium Preview:

High Quadriplegics: They Can Go Home Again

With high quadriplegics surviving at unprecedented rates, quality of life issues and discharge planning are of paramount importance from the first

day of admission to the specialty setting. The philosophy of treatment at SSC will be covered, including the referring physician's role in long-term medical management.

Medical Overview: Care of the High Quadriplegic

The potential for complications such as deep vein thrombosis, stress ulceration, decubitus, pneumonia, urinary tract infections and sepsis poses a serious threat to high quadriplegic patients. Prevention strategies, the benefits of early mobilization of ventilator dependent patients and medical management of complications are covered.

Ventilator Weaning

All high quadriplegics at Shepherd Spinal Center are evaluated to determine their candidacy for phrenic nerve pacer implants and their potential for weaning from mechanical ventilation. The pulmonary evaluation studies performed at SSC and protocols for weaning are included.

Panel and Concurrent Session Topics:

- Pulmonary Issues
- Social Work: Discharge Planning, Peer Support, Sexuality
- The Therapeutic Value of Sensory Experience
- The Biofeedback Program at SSC
- Ventilator Home Care
- Focus On: Phrenic Pacer Implantation
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High Quadriplegia— The Ultimate Challenge

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Case Study: Larry McAfee

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When 28 year-old Larry McAfee was brought to Shepherd Spinal Center as a result of a motor-cycle accident in late 1985, he was classified as a C-1 complete spinal cord injury. He was suffering from severe burns on his right ankle, massive atelectasis, pneumothorax and pneumonia. Paralyzed instantly at the first cervical vertebrae below the brain stem, he required mechanical ventilation for breathing.



The road to a meaningful quality of life has been a long one for Larry, requiring intensive medical care, rehabilitation, counseling--and Larry's own unsinkable spirit.

We couldn't promise Larry miracles, but we could promise him the care of the largest rehabilitation hospital in the nation specializing in paralyzing spinal cord disorders, Shepherd Spinal Center in Atlanta. With the help of various adaptive devices and skilled attendants, it is possible for Larry to live independently

in an apartment since his discharge from Shepherd. He now actively pursues his goal of a career as a computer programming consultant.

At Shepherd Spinal Center, our ultimate challenge is to assist patients like Larry in a comprehensive High Quadriplegia Program, (C 1-4). We involve referring physicians in all aspects of discharge planning for follow-up medical supervision with the hope that patients like Larry will go home again.

Your patients count on you. Accept the challenge and work with us...for them.

The Georgia Regional Spinal Cord Injury Center/Fully Accredited by CARF and JCAH/Designated "Model Spinal Cord Injury Program" by U.S. Dept. of Ed./Now offering a comprehensive Spina Bifida Program/Nation's Largest Dedicated Spinal Cord Injury and Disease Treatment Facility.

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Editorial

EULOGY WRITTEN IN A COUNTRY CHURCHYARD

Stories related to the AIDS epidemic dominated the media coverage of last year's annual SCMA convention, and this year's meeting promises to be a repeat. Already, it appears that two ethical issues will receive top billing. First, do physicians have the right to refuse care of HIV-positive patients? Second, do HIV-positive physicians have the right to practice without restraints? Persons who deal with the formulation of "AIDS policies" often find themselves walking on hostile, unfamiliar terrain without a map. The thorny problems force us to choose between worthy, but conflicting principles. Finding myself in this position to an increasing extent last summer, I sought refuge in a library.

The library for those lunch hours was the South Caroliniana, located on a corner of the University's historic horseshoe. My project was the history of the Columbia Medical Society. The minutes began in May, 1865 at what must have been the absolute nadir of organized medicine on the North American continent. Seven physicians, defeated, demoralized, in several instances even homeless as a result of Sherman and the fire, met with a single purpose: to be reimbursed for their services. They joylessly resolved to re-establish the antebellum Fee Bill, and then adjourned. From this lowly beginning, the dusty volumes slowly but surely told the story of a county medical society. But that story is not the purpose of this editorial.

It happened on or about my 15th visit to the library. Turning another page, with care not to tear the browning paper, I confronted what seemed to be a routine obituary. It began: "Theodore Brevard Hayne was born August 3, 1893 at Blackstock, S.C. . . ." I yawned and began to scan my way through the page as I had scanned my way through countless others in search of patterns. Suddenly, my hairs bristled. I got up from the desk, closed the book, left Columbia, and headed east out the Sumter highway. I had to see it.

I had been down the winding country road a few times, but had never taken the sharp turn to

the right. It promised nothing but a few more nondescript houses, a few more fields, and woods. Suddenly, there it was, incongruous with its surroundings: a neat, newly-white, wooden church with immaculate grounds. It didn't take long to find the marker. One side of the obelisk carried the message: "THEODORE BREVARD HAYNE, M.D. DIED OF YELLOW FEVER IN LAGOS, NIGERIA, WEST AFRICA. INTERMENT AUG. 24, 1930. GREATER LOVE HATH NO MAN THAN THIS, THAT HE LAY DOWN HIS LIFE FOR HIS FRIENDS." I stood there for a long time, giving no thought to the hot July sun.

Although the son of a surgeon, Theodore had not set out to be a doctor. But he was keenly interested in science, and at the tender age of 16 had carried out a survey of the Little Salkehatchie Swamp in Colleton County. When he graduated from The Citadel in 1920, he took a job with the Public Health Service in vector-borne diseases. He was stimulated by the senior investigators whom he impressed in turn, and who gave him credit for assisting with the discovery that mosquito larvae can be killed by Paris Green. Perhaps more importantly, he single-handedly disproved a prevailing notion that mosquitoes cannot cross large streams. This he accomplished in Chester County, by staining anophelene mosquitoes with an aniline dye and afterwards recapturing a stained mosquito a mile and a half away on the other side of the Catawba River.

Inspired, Theodore Hayne went back to Charleston for medical school, graduating from the Medical College in 1927. He did the usual internship, but his first love was still scientific investigation in general, and mosquito-borne diseases in particular. It was for that reason that he accepted a position with the Rockefeller Foundation at its center for studying yellow fever in Lagos, Nigeria. The work was known to be dangerous. A single break in technique, a single bite, and one could have the potentially-fatal disease. Two previous investigators had lost their lives.

Theodore Hayne stayed there for 18 months and then returned to South Carolina, where he married his sweetheart in January of 1930. On March 29, he left for another 18 month tour of duty in Lagos. He discovered that many of the broods of mosquitoes with which he was working contained dwarf variants, and he took care to use finely-meshed wire containers. Nevertheless, it is theorized that such a dwarf mosquito escaped and bit him, causing the fatal yellow fever attack from which he died on July 11, 1930. Standing there in the churchyard, I realized an added dimension to the tragedy not evident in the moving obituary. A daughter was born of his brief marriage, only to die in early childhood—one might assume from an infection which a decade later would have responded easily to antibiotics. With only an occasional blackbird looking on, I made no attempt to hold back the tears.

The minutes of the medical society noted that it "was the love of science and not the strains of martial music nor the cheering of his comrades that made Theodore so nobly sacrifice his life, a martyr in the service of mankind fighting an invisible foe." I reflected on the notion that Theodore Hayne had *volunteered* for such dangerous duty. That one could contract such an untreatable and fatal illness from routine patient care had disappeared from medicine during this century. Now, it has returned in the form of AIDS.

I suggest no obvious parallels. On the one hand, yellow fever was much more contagious than AIDS, and Theodore Hayne's work therefore much more dangerous than even the bloodiest surgical procedure on an AIDS victim. On the other hand, AIDS is a different kind of disease. Death does not come swiftly—perhaps almost mercifully swiftly—as it did from yellow fever or even bubonic plague. Rather, HIV places a sword of Damocles over the infected person indefinitely, a sword not without its social stigmata. A different peril, for a different age.

Churchill called courage "the first of human qualities because it is the quality which guarantees all the others." AIDS demands of us, as physicians, a new dimension of courage which heretofore was not demanded by the world. This is the courage to face—with every patient contact—*potential* exposure to a chronic but apparently uniformly fatal disease for which there is no cure, which can be transmitted to others for at least 10 years, and which is not socially acceptable. As I stood there in the country churchyard, I wondered what Theodore Hayne would have said. I suspect that he would have taken an interest in our many problems, but without further ado would have gotten about the business of finding solutions. I suspect that he would not have talked and talked and talked about it, as so many persons today seem so inclined to do.

—CSB

**ON THE COVER:
THEODORE GAILLARD CROFT, M.D.
JULY 10, 1845-MARCH 10, 1915**

Few physicians have had the ignominious duty of presiding over a trial of their peers for malpractice. However, in his capacity as President of the South Carolina Medical Association in 1902, Theodore Gaillard Croft, M.D. was charged with such a responsibility. A member of the state organization had been accused and convicted of numerous malpractice cases, and at the 1902 meeting of our association held that year in Spartanburg, Dr. Croft, an Aiken general practitioner, presided. The trial was apparently a lively one and was protracted by repeated outbreaks of disrespect and hisses by the members of our association.

Having been reared in Greenville, South Carolina, the son of Theodore Gaillard and Eliza Webb Croft, young Dr. Croft's early education was received at Pierce's School and at Furman University. He also took courses at The Citadel in Charleston and at the University of Virginia. He enrolled in the Medical College of the State of South Carolina at Charleston and graduated in 1875, at which time he received the high honor of class valedictorian.

Dr. Croft was a Confederate veteran whose ardent love for the Confederacy never waned. In 1861, he had enlisted and served as a Sergeant in the 16th South Carolina Volunteers. During the period of 1862 to 1865, he offered service at the South Carolina Military Academy.

Dr. Croft was a descendent of one of South Carolina's first families, which immigrated to the South Carolina low country from the West Indies about 1700. His uncle, John Gaillard, served as a United States Senator from South Carolina for 24 years.

Dr. Croft had many honors and contributed meaningfully of his time in his memberships in

the American Medical Association, the South Carolina Medical Association, the Tri-State Medical Association, the Association of Surgeons of the Southern Railroad and in the Aiken County Medical Society. Dr. Croft married twice in his life and had six children. One of his sons, T. G. Croft, also became a physician.

As one of South Carolina's substantial citizens, Dr. Croft died in a Columbia hospital from a short illness.

Other than his activities as listed above and his activities in the Aiken Central Democrat Club, little information is available on Dr. Croft in the Waring Library. Readers or family members having information on Dr. Croft are encouraged to share that information with our archives in Charleston.

ADDENDUM: This pictorial history of medicine in South Carolina is in its eighth year of monthly cover stories depicting individuals, instruments and facilities which are reflective of our medical heritage. The Waring Historical Library of the Medical University of South Carolina in Charleston is a valuable storehouse of information and artifacts and is open to those curious about this aspect of our heritage. Nevertheless, much data is missing in our archives, and individuals and interested friends are encouraged to notify us of their relatives or share with us their own personal vignettes and historical bibliographies of people and places who have contributed to our South Carolina medical heritage. If you have such data, it would be welcomed and considered for inclusion in our pictorial history series.

—THOMAS M. LELAND, M.D., PH.D.

USE OF HAEMOPHILUS POLYSACCHARIDE VACCINE IN A RURAL CLINIC SETTING*

STEVEN A. ROSS, M.D.**
CHARLES P. DARBY, M.D.
JEFFEREY HARVELL, M.S.
CHRIS WATSON, R.N.

Haemophilus influenza type b is the most common cause of infant and childhood meningitis.¹ Mortality ranges about three to 10 percent and neurological sequelae 25 to 50 percent.² Hib is the major etiology of serious invasive childhood infection of industrialized nations.³ Epiglottitis, arthritis, cellulitis, osteomyelitis, and pneumonia are also caused by Hib significantly in children over 18 months.³ Also of concern are secondary cases of invasive Hib diseases resulting from exposure to household contacts or children in day care centers,⁴ and the emergence of resistant strains of Hib, including CSF isolates to rifampin.⁵

The polysaccharide Hib vaccine has proven to be a safe vaccine.^{1, 2} Antibodies to the organism's capsular polyribophosphate protect against systemic infections.^{1, 6, 7} The persistence of this antibody is age dependent, however, with a rapid decline of serum Hib antibody levels in children vaccinated under 18 months.⁶ The Finnish trials indicate that 75 percent of the patients vaccinated from 18 to 23 months, and 90 percent of the children vaccinated after 24 months of age, were found to have a protective antibody titer.³ This present study was designed to evaluate the safety

and efficacy of the aggressive administration of the Hib vaccine in a low socioeconomic, rural population.

MATERIALS AND METHODS

The initial 100 children 18 months to six years of age requiring the Hib vaccine were immunized at Lee Medical Practice clinic in Bishopville, S.C., August 15, 1985, through November 12, 1985. These routine pediatric clinic patients each received 0.5 ml b-CAPSA 1 Haemophilus influenza type b vaccine. Among the initial recipients were 15 children 19 to 59 months of age with local wounds, Tinea sp. infections, and impetigo, who were vaccinated. The vaccine was administered through a non-affected area of the skin.

Parents were given questionnaires for the evaluation of side effects within 48 hours post-vaccination. Temperature, irritability, tenderness, swelling, and any other reaction were to be recorded. Parents could reply by mail or by phone.

Laboratory Techniques:

Serum samples were collected 11 to 15 months post-vaccinations in the children 19 to 59 months of age with dermatological lesions for evaluation of antibody production in this patient population. Blood samples were allowed to clot at room temperature one to six hours prior to centrifugation. 0.5 ml sera was pipetted into each of four Nunc cryo tubes which were frozen. Specimens were

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** Present address: 56 South Jersey Street, Denver, Colorado 80224.

HAEMOPHILUS B VACCINE

packed on dry ice and shipped to Praxis Laboratories in Rochester, New York.

Antibody response to *Haemophilus influenza* type b was determined by the use of a Farr precipitation assay at the Praxis Biologics in Rochester, New York. Total specific antibodies to PRP were quantitated. The antigen used was a purified type specific capsular polysaccharide, polyribosylribitol phosphate (PRP). The radio-labelled antigen was mixed with dilutions of patient sera and incubated. PRP-specific antibodies bind to this antigen, and this complex is precipitated with ammonium sulfate. The antibody is quantitated by measurement of the precipitated labelled antigen. Dilutions of a reference sera (FDA) are used to generate a standard curve. This standard curve was used to quantitate PRP specific antibodies in the patient's serum.

Results:

One hundred percent of the families replied to the questionnaires by mail and/or phone. As shown in Table I, primary vaccination with the b-CAPSA 1 Hib vaccine resulted nine of 100 (nine percent) of the patients experiencing temperature elevation above 37° C (98.6° F). None of the children with dermatological lesions were febrile. Seven percent of the patients were noted to be irritable, and local reactions were noted in four percent. No wheezing or serious systemic reaction was noted. One patient on Dilantin for a seizure disorder was felt to have had a "questionable" seizure at home within 48 hours post-vaccination.

Serum anti-*Haemophilus influenza* type b capsular polysaccharide antibody levels are shown in Table II. Those patients 19 to 59 months with dermatological lesions of *Tinea* sp. infection, im-

petigo, and local wounds were evaluated 11 to 15 months post-vaccination as described earlier. Antibody titers were studied only in the patients with skin lesions. A three-year-old black male with *Tinea corporis* was lost to follow-up. The remaining 14 patients showed levels greater than 1.0 ug/ml in 92.8 percent (13/14). A Pakistani-American female, 31 months of age at the time of vaccination, was noted to have only a titer of 0.16 ug-ml anti-*Haemophilus influenza* type b capsular polysaccharide antibody level 14 months post-immunization.

DISCUSSION

Despite this decade's improvements in ICU care and newly developed antibiotics, the morbidity and mortality of Hib meningitis remain high.^{1, 3} This encapsulated bacteria continues to be the most frequent etiology of bacterial meningitis and serious invasive infections in American children.^{1, 2, 3} The increasing use of child care outside the home in the past decade presents even more challenges to the primary care provider.⁴ Although recent studies indicate that the risk for secondary spread of Hib infections is greater in households with small children than in day care centers,⁸ there is concern over the higher colonization rates in the small day care centers with a primary case of Hib disease.^{4, 8} Further complicating matters is the increasing antibiotic resistance of Hib.^{1, 5}

Our study documents the clinical safety with the use of b-CAPSA 1 *Haemophilus b* Polysaccharide vaccine in a small group of patients in a rural pediatric setting. Fever was the most common side effect noted with an incidence of two percent for a fever greater than 38.3° C, which

TABLE I
SIDE EFFECTS WITHIN 48 HOURS OF IMMUNIZATION WITH b-CAPSA 1 HAEMOPHILUS
TYPE B POLYSACCHARIDE VACCINE IN 100 STUDY PATIENTS

Side Effects	# Immunized (without skin lesions)	# Immunized (with skin lesions)	Total
Total Immunized	85	15	100
Fever			
Greater than 38.3 C	2	0	2
Less than 38.3 C	7	0	7
Local Swelling and Tenderness	3	1	4
Irritability	6	1	7
Other	? Seizure	0	?1

TABLE II
SERUM ANTI-HIB CAPSULAR POLYSACCHARIDE ANTIBODIES IN PATIENTS WITH
IMPETIGO, *TINEA SP.* INFECTIONS, AND LOCAL WOUND INFECTIONS

<i>Patient</i>	<i>Lesion</i>	<i>Vaccination Age</i>	<i>Time Post-Vaccination</i>	<i>Titers ug/ml</i>
1. BM	Tinea Versicolor	4.7 Years	13 Months	Greater than 40.0
2. BM	Impetigo	2.7 Years	14 Months	1.59
3. BF	Impetigo	4.1 Years	12 Months	4.19
4. BF	Wound Infection	3.4 Years	13 Months	2.7
5. BM	Tinea Corporis	4.8 Years	14 Months	1.14
6. BF	Folliculitis	2.1 Years	15 Months	7.79
7. WM	Wound Infection	3.6 Years	14 Months	20.98
8. BF	Impetigo	4.1 Years	13 Months	1.62
9. AF	Impetigo	2.6 Years	14 Months	0.16
10. BF	Impetigo	4.5 Years	13 Months	20.56
11. BF	Impetigo	2.1 Years	12 Months	2.72
12. BF	Tinea Versicolor	3.0 Years	13 Months	16.39
13. BF	Tinea Corporis	3.9 Years	11 Months	3.88
14. BM	Tinea Corporis	2.2 Years	12 Months	Greater than 40.0

was consistent with the 2.3 percent incidence noted in the recent northern California study.⁹ No serious systemic reaction or bronchospasms were observed in our population.

Among the patients with impetigo, wounds, and *Tinea sp.* infections, no febrile episodes were observed. One child was described as irritable and another had a local swelling at the site of the immunization. Radioimmune assay studies of anticapsular antibodies in these patients demonstrated "protective" levels of greater than 1.0 ug/ml in 92.8 percent of those studied. There is no obvious explanation for the low antibody (0.16 ug/ml) level in the 31-month-old Pakistani child. This child was re-vaccinated at age 47 months and her pre- and post-antibody levels were <.10 mg/ml. and 1.02 mg/ml respectively. A post-immunization protective level of serum anti-Haemophilus influenza type b capsular polysaccharide antibodies is generally considered to be 1.0 ug/ml or greater.¹ It was noted that 80 percent of the Finnish children 12 to 17 months obtained antibody levels of only 0.15 ug/ml post-vaccination and lacked clinical protection.⁶ The Finnish trials indicated that 90 percent of the vaccinated children 24 to 71 months had protective levels. Subse-

quent studies have implicated genetic factors in the poor response to polysaccharide vaccines.³

On the horizon, research continues to resolve the dilemma of an infant's slowly maturing immunocompetence to polysaccharide vaccines at the time of the maternal IgG antibody decline.⁷ Studies indicate that covalent coupling of protein carriers to the capsular PRP increase infant immunogenicity, perhaps enough for protection during the peak incidence of Hib invasive disease, which occurs before the first year of life.^{1, 7}

Further research involving pre-immunization and post-immunization antibody studies, larger patient populations, and longer clinical follow-up are required to evaluate this and future vaccines against Hib. The data presented in this study add support to the safety and effectiveness of the Hib vaccine.

ACKNOWLEDGEMENTS

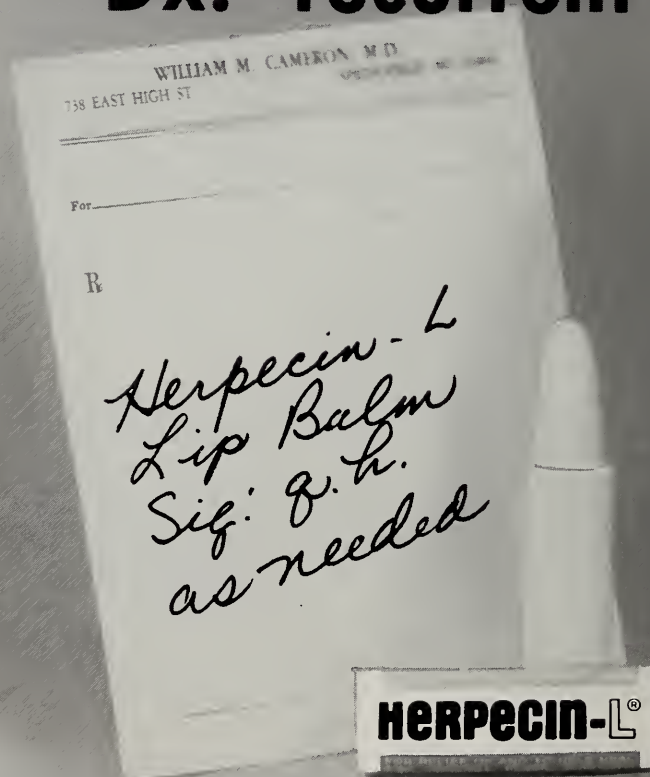
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HAEMOPHILUS B VACCINE

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COMBINED TRACHEAL AND ESOPHAGEAL TRANSECTION FROM BLUNT TRAUMA TO THE NECK*

D. S. WEIMAN, M.D.**

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Reported cases of traumatic tracheal ruptures have increased in recent years. This injury is more common because of the increased use of off-road recreational motorcycles and snowmobiles. The successful management of a patient with combined tracheal and esophageal transections from blunt trauma is presented.

CASE HISTORY

D. B. is a fifteen-year-old white male who, while riding his motorcycle on a dirt road in the early evening, ran into a wire which was stretched across the road. His neck was caught by the wire, dislodging him from his bike. The patient was stable at the scene of injury and was subsequently transferred to the emergency room via the Medivac Helicopter system. In the emergency room he had stable vital signs. Physical exam revealed a red mark across his neck, circumoral cyanosis and stridor. With on-line traction being maintained on the neck, an endotracheal tube was inserted with direct visualization of the vocal cords. However, neck inflation was noted when attempts were made to ventilate the lungs through the endotracheal tube. A transverse neck incision was then made in anticipation of a tracheostomy. After the skin and subcutaneous tissue had been incised, the pre-vertebral fascia was observed with no evidence of distal trachea. The distal trachea was palpated deep in the mediastinum. The trachea was advanced back into the neck with a hemostat,

thereby allowing placement of a #8 French endotracheal tube for temporary airway maintenance. The patient then was taken to the operating room where distal control of the thoracic trachea was obtained through a median sternotomy. The site of the transection was the fourth tracheal ring. After the edges of the transection had been cleaned, the trachea was primarily repaired with interrupted 4-0 Vicryl sutures. During the course of the dissection the recurrent laryngeal nerves could not be identified, but a transection of the esophagus at the level of the pharynx was seen.

After the trachea had been repaired, a proximal tracheostomy was performed at the C-2 level. The distal esophagus then was mobilized and brought out through a lateral neck incision as an esophagostomy. A nasogastric tube was placed through the pharyngeal defect and exteriorized through a separate stab wound incision in the left neck. Penrose drains were placed and the wounds were closed.

During the patient's post-operative course, he was returned to the operating room twice for drainage of fluid collections in the neck. He subsequently did well and went home with a functioning spit fistula, cervical esophagostomy, and tracheostomy in place. A feeding tube had been placed into the cervical esophagostomy for nutritional maintenance. Three weeks post-operatively, a bronchoscopy revealed the suture line to be well healed with no evidence of tracheal stenosis.

Six weeks later, bronchoscopic examination showed the cords to be fully adducted with no evidence of motion. The suture line remained well healed and there was no evidence of tracheal stenosis. The patient was then brought back to the

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operating room where the distal esophagus was mobilized through the neck incision. The spit fistula was traced back to the pharyngeal laceration and the esophagus was primarily reconstructed using 4-0 interrupted silk sutures. In the course of the dissection, the left lobe of thyroid gland was excised to permit exposure of the pharyngeal defect. Again, the recurrent laryngeal nerves could not be identified. On the seventh post-operative day, a barium swallow demonstrated no evidence of an anastomotic leak but some stricturing of the esophageal repair. Subsequently, the patient has undergone esophageal dilatations with Maloney dilators. He performs these dilatations by himself at home, and has normal intake with appropriate weight gain.

Three months after the esophageal repair, repeat bronchoscopy again revealed the vocal cords to be in the midline with no evidence of motion. Because the vocal cords were paralyzed in the median position, arytenoidopexy was done to allow removal of the tracheostomy. The patient has done well from his reconstruction and has returned to school.

DISCUSSION

Traumatic rupture of the trachea with its associated respiratory compromise provides a major challenge to salvaging patients who often have serious associated injuries. Management priorities must be given to controlling the airway and correcting any ventilation defects. Although the incidence of this injury is unknown, major tracheal and bronchial injuries have been demonstrated in 0.8 to 2.8 percent of patients dying from accidents.¹ In 1966, Chesterman and Satsangi reported a 30 percent mortality from rupture of the trachea and bronchi by closed injury.² In their series, half of the victims died within an hour after arrival to the hospital.

The trachea is injured by a variety of mechanisms. In blunt trauma, direct compression of the trachea against the spine can lead to transection. Blunt trauma to the chest wall may cause tracheal and bronchial injuries from associated rib fractures or from high intraluminal pressures at the onset of expiration with a closed glottis. A blow to the neck can avulse the larynx and cricoid cartilage from the trachea. Penetrating trauma to the neck and chest may also produce wounds of the tracheo-bronchial tree.



FIGURE 1. Post-operative chest x-ray showing naso-pharyngostomy tube and esophagostomy. Clip is at level of tracheal reconstruction.

Patients with complete separation of the trachea may survive for a period of time if airway continuity is maintained by the peritracheal tissue. Incomplete rupture with maintenance of airway may lead to later tracheal stricture and airway compromise, necessitating surgical reconstruction.

Clinical suspicion of tracheal injury is critical for rapid, proper management. Subcutaneous emphysema, cough, hemoptysis, pneumothorax or rib fractures may be present. Pain on swallowing and hoarseness can occur. Airway obstruction may or may not be present.

In patients who are suspected of having a tracheal injury, airway compromise may preclude further studies. In patients who are stable, bronchoscopy should be done to establish the site of injury. The study is most safely done in the operating room prior to thoracotomy (for thoracic disruption) or neck incision (with possible median sternotomy) for higher disruptions.

Ruptures or large tears of the trachea are surgically repaired to prevent loss of airway control

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with death, and to prevent the late complications from resulting fibrosis. In tracheal repair, it is important to avoid tension on the suture line, and also to use absorbable sutures thereby decreasing the likelihood of subsequent stenosis.

If the esophagus has also been ruptured, we feel that total diversion is necessary to lessen the chance of tracheal disruption from an infected suture line. Diversion is accomplished with a cervical esophagostomy and spit fistula. The former allows access for tube feedings until esophageal reconstruction is performed. At that time, mobilization of the distal esophagus is accomplished either through the neck incision, or if this is not feasible, a thoracotomy may allow further mobilization to prevent tension at the suture line. If a large segment of esophagus has been removed, consideration can be given to a free jejunal graft to restore esophageal continuity.

In the patient with recurrent laryngeal nerve injuries, delayed arytenoidopexy will allow tracheostomy removal.

SUMMARY

In repairing a combined tracheal and esophageal transection in the neck, primary importance must be given to the airway repair. In an effort to protect that tracheal reconstruction, the esophagus should be mobilized and diverted so that leakage of esophageal contents will not dis-

rupt the tracheal repair. Nutritional requirements can also be met through the cervical esophagostomy. After the tracheal repair has healed, the esophagus may be mobilized from the neck incisions and a delayed primary repair performed. If the patient is suspected of having recurrent laryngeal nerve injuries, a tracheostomy should be placed at the time of the tracheal repair. If the recurrent laryngeal nerve injuries subsequently are confirmed, an arytenoidopexy allows removal of the tracheostomy. □

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THE PHYSICIAN AND THE LIVING WILL

DONALD E. SAUNDERS, JR., M.D.*

On March 6, 1986, South Carolina became the thirty-fifth state since 1976 to enact a living will or "Death with Dignity" act. Legal counsel for the South Carolina Medical Association (SCMA) subsequently has advised the membership against discussing this law with their patients, advising instead referral to a lawyer. This paper discusses the ethical basis for advising physicians about whether to include discussion of the living will in their physician-patient interaction and serves as background for an opinion by the SCMA Medical Ethics Committee.

Living wills, widely promulgated since 1969¹ are written declarations instructing physicians not to use life-prolonging treatment or procedures when terminal illness is firmly diagnosed. Terminal illness is an incurable or irreversible condition in which death will occur in a relatively short period of time unless life-sustaining treatment or procedures are used. Living wills should conform with state law when applicable, as in South Carolina. The absence of a living will does not presume consent to life-prolonging treatment, nor does it concede the right to refuse such treatment.

PATIENT-PHYSICIAN COMMUNICATION

Since only physicians can prescribe the necessary life-prolonging treatment, in essence *a living will is a form of explicit communication from patient to physician for future use when and if the patient becomes incompetent or unable to communicate his consent or refusal.*

In the absence of adequate prior communication, when a terminally ill patient is incompetent, the burden of consent or refusal traditionally transfers to the family or, less commonly, to a legal guardian who are asked to make the same decision the patient would if he were capable of doing so. Such "substituted judgement"² is often made difficult because of failure to have discussed the situation with the patient earlier, lack of agreement among family members, or psychological

problems including guilt, parent-child relationships, and conflicting duties to other close family members.

Effective patient to physician communication is an essential component of the time honored physician-patient relationship which serves to promote the patient's trust in those responsible for his health care. If one agrees that a living will, in appropriate circumstances, is a more effective form of patient to physician communication than substituted judgement and agrees that effective communication is desirable and necessary, appropriate use of living wills is morally good for both physicians and patients.

TRADITIONAL MEDICAL CODES AND OATHS

Ethical behavior by physicians is based on codes, oaths, and traditions which began with the origins of written history. Ancient medical codes provide only limited guidance for contemporary physicians caring for terminally ill hospitalized patients. Most of today's hospitals provide Intensive Care Units with readily available support for such vital functions as aerobic metabolism (respiration and nutrition), waste removal (substituted or augmented renal function), circulation, and management of infection.

For the physician dealing with a terminally ill patient, the most appropriate part of the Hippocratic Oath is: "I will follow that system of regimen which, according to my ability and judgement, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous." In Hippocrates' writings titled "Of the Epidemics"³ is the frequently quoted advice that a physician should "have two special objects in view with regard to diseases, namely, to do good or to do no harm." From this we have derived and developed the conjoined principles of beneficence (doing good) and avoidance of maleficence (doing harm).

The ethical question results from whether delaying death in a terminally ill patient is good or harmful. Some of today's physicians appear to

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have adopted the attitude that preserving biologic life by any or all available treatment or support mechanisms is an imperative which supercedes all other considerations.⁴

M. B. Etziony's 1973 book⁵ exhaustively records medical oaths, codes, prayers, and aphorisms from many cultures, religions and literary sources beginning in the earliest time. In none of these sources is there a specific injunction to prolong life at all cost. The "Declaration of Geneva," adopted by the General Assembly of the World Medical Association in 1948,⁵ includes the statement: "I will maintain the utmost respect for human life, from the time of conception; even under threat, I will not use my medical knowledge contrary to the laws of humanity." Respect for human life is hardly synonymous with an imperative to prolong the life of a terminally ill patient against his wishes.

The South Carolina Board of Medical Examiners, the legal licensing agency for medical practice in this state, requires licensees to adhere to principles of medical ethics. These principles are enumerated in Rule 81-60.⁶ The most relevant to care of the dying patient is principle A. "The principal objective of the medical profession is to render service to humanity with full respect to the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion." The American Medical Association's (AMA) Council on Ethical and Judicial Affairs periodically issues "Current Opinions" on specific ethical issues. This Council is composed of seven physicians who publish written opinions which are not subject to approval by the AMA House of Delegates. The 1986 "Current Opinions"⁷ includes statements which endorse the living will concept.

"A competent adult patient may, in advance, formulate and provide a valid consent to the withholding or withdrawal of life-support systems in the event that injury or illness renders that individual incompetent to make such a decision. The preference of the individual should prevail when determining whether life-support measures should be undertaken in the event of terminal illness." (2.19)

"Life prolonging medical treatment includes

medication and artificially or technologically supplied respiration, nutrition or hydration. In treating a terminally ill or irreversibly comatose patient, the physician should determine whether the benefits of treatment outweigh its burdens. At all times the dignity of the patient should be maintained." (2.18)

The Council on Ethical and Judicial Affairs is guided by the AMA Principles of Medical Ethics. At its first meeting in 1847, the AMA adopted a code of ethics. Major revisions followed in 1903, 1912, 1947, and 1957. After three years of study and debate, the AMA house of Delegates adopted the current version in 1980. According to medical ethics scholar Robert M. Veatch,⁸ this was the first document in the history of professional medical ethics in which a group of physicians was willing to use the language of personal rights. Principle IV states "A physician shall respect the rights of patients, of colleagues, and of other health professionals. . . ."

PATIENT PARTICIPATION IN MEDICAL DECISIONS

The role of the patient in the trinity of physician, patient and disease is firmly rooted in precepts of the wise men of ancient Greece from whom we derive much of contemporary moral philosophy. Hippocrates, in the same paragraph from "Of the Epidemics" quoted above, stated: "The art (of medicine) consists in three things—the disease, the patient, and the physician. The physician is the servant of the art, and the patient must combat the disease along with the physician."

The meaning of "art" when translated from ancient Greek means anything produced by man as opposed to occurring in nature. Production of art requires certain skills employed by the maker. Hence the art of medicine refers to the knowledge and skills that comprise the know-how to practice medicine.

Aristotle, in the fourth century B.C., referred to physicians as *cooperative* artists as opposed to *productive* artists.⁹ Examples of productive artists are furniture makers and shoe makers who produce things that would not otherwise exist. According to Aristotle, physicians, farmers, and teachers are cooperative artists, producing nothing without cooperating with nature. Farmers

help nature to produce crops and teachers help students to acquire knowledge; however, crops can and do grow without farmers and students can and do learn without teachers. Likewise, humans can and do become born, recover from illness or injury, and die without help from physicians. Just as the farmer can apply his know-how to production of more and better crops by skilled cooperation with nature, so the physician can cooperate with his patient to better heal, relieve suffering, or delay death where it is possible to do so.

The right of an informed and competent patient to refuse medical treatment is based on what philosophers refer to as the natural right of *autonomy*. A natural right is a right possessed by all human beings who are assumed to share a common human nature. The legal basis for the right to refuse treatment is based on Anglo-American common law and, according to some but not all legal scholars, on the American Constitution. The legal term for this right is *privacy*.

The idea upon which autonomy and privacy are based is liberty restrained by justice. From liberty we derive the standard that persons should be free to define and act upon their own notion of the good life (or death). Justice limits freedom when actions by one individual result in interference with the liberty of others.

Autonomy and privacy are the moral and legal principles underlying the widely accepted ethical and legal requirements for informed consent. Refusal is an antonym for consent. Therefore, informed consent is a meaningless "right" without its tacit opposite, informed refusal.

LEGAL ADVICE TO PHYSICIANS ABOUT LIVING WILLS

If 34 states had previously enacted living will statutes and if one accepts the moral and legal basis for its use as a valuable form of patient-physician communication, why has legal counsel advised physicians not to discuss use of living wills with their patients?

This advice is based on a concern for legal liability, including expressed penalties, based on the language of the S. C. Death with Dignity statute. Statutory law on this subject varies from state to state.¹⁰ The S. C. Act was passed nine years after first being introduced and was widely revised before final passage. The Act contains a specific form which the will must "substantially"

take, with the only blanks to be filled in comprising the declarant's name, city and county of residence, date, names of the three witnesses, and the usual notary public form.

The Act requires that the witnesses must not be related by blood or marriage to the declarant, not be directly financially responsible for the declarant's medical care, not be heir to any portion of the declarant's estate, not be beneficiary to the declarant's life insurance, and not be the attending physician or that physician's employee. For patients in hospitals or nursing homes, only one witness may be an employee of that health care facility and one of the witnesses must be an ombudsman designated by the State Ombudsman. Thus, a simple patient to physician communication was burdened with complex requirements.

Of greater concern are the statute's Penalty Sections, 13 and 14.

"Section 13(A) If any person knowingly provides or aids another in providing any false information of any nature in any manner relative to the declaration of a desire for a natural death under this act, including but not limited to, the contents of the declaration, and life-sustaining procedures are withheld or withdrawn from the declarant and the declarant dies as the result of that withdrawal or non-treatment, *the person is guilty of murder* and must be punished in accordance with the law of the state."

(B) (Same as A up to) "and the declarant does not die but further expenses are incurred as a result of the withdrawal or non-treatment, in caring for the declarant, *the person is responsible for the payment of those expenses.*"

"Section 14. Any person who coerces or fraudulently induces another person to execute a declaration under this act and the declarant dies as a result of the withdrawal of treatment or non-treatment in reliance on the declaration, *that person is guilty of murder and must be punished in accordance with the laws of the state.*" (italics added)

Thus, there is a legal concern that a well-intentioned physician who counsels his patient about that patient's right to use a living will may face a later charge of "providing false information" or being one who "coerced or fraudulently induces another person to execute a declaration." The

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additional statement that the penalty of such action is to be "guilty of murder" is remarkable since the criminal justice system acts on the presumption of innocence until guilt is proven by due process of law.

There appears to have been a hyperbolic attempt on the part of the authors of the Death with Dignity Act to prevent misuse. These good intentions have resulted in a law which is difficult to use, much less to misuse. Already the journal of the South Carolina Bar has published a detailed critique of the Act suggesting extensive revision."¹¹

An *ad hoc* committee of the South Carolina Bar Association, chaired by Elizabeth Patterson of the University of South Carolina Law School, has suggested revision of the Act, including modification of Penalty Sections 13 and 14. In the suggested revision, "guilty of murder" is eliminated. An important suggested addition is the following:

"Nothing herein shall be construed to prohibit any person from informing another person of the existence of this Act or delivering to another person a copy of this Act or a form of declaration, or from counseling another person in good faith concerning the execution of a declaration." (Elizabeth Patterson, personal communication)

Until a future time if and when an amended Act becomes the law in South Carolina, current knowledge suggests that legal risk to physicians is extremely small. No physician in any state has been successfully prosecuted or found civilly liable for having followed the provisions of a living will.¹²

Section 7 of the South Carolina Act includes legal protection for the physician who relies on a living will and withholds life-sustaining treatment. "Unless it is alleged and proved that the physician's action violated the standard of reasonable professional care and judgement under the circumstances, he is immune from civil or criminal liability."

The attending physician has a legal need to know whether his terminally ill patient has a

living will, since the current law specifically requires that it be used. Section B states: "A failure by a physician to effectuate the declaration of a terminal patient shall constitute unprofessional conduct if the physician fails or refuses to make reasonable efforts to effect the transfer of the patient to another physician who will effectuate the declaration."

In patients without living wills, only once, in 1982, has a physician been charged with murder for removal of life support systems and that case never came to trial.¹⁰ In *Barber and Nejdle v. Superior Court* in California, surgeon Robert J. Nejdle and internist Neil L. Barber were accused of murdering Clarence L. Hubert, a 55-year-old man who had cardiac arrest resulting in irreversible brain damage as a complication of elective surgery. With the family's consent, Drs. Nejdle and Barber subsequently disconnected Hubert's respirator. When he resumed spontaneous respirations, food and fluids were withdrawn, again with family permission, and he died. A hospital nurse informed the district attorney, who brought a charge of murder against the two physicians. The defendants appealed to the California Court of Appeals to avoid trial and won their case on October 12, 1983.

SUMMARY

Living wills have been widely employed in the United States for two decades, and since 1976 over two-thirds of the states, including South Carolina, have enacted laws concerning living wills. The ethical basis for living wills includes such fundamental principles of medical ethics as the physician-patient relationship, beneficence, respect for human dignity, autonomy, liberty, and informed refusal of treatment. Legal concerns in South Carolina are based on the language and provisions of the South Carolina Death with Dignity Act rather than on specific legal precedent or widely accepted moral values. It is ethically proper for physicians to counsel patients about use of living wills under any circumstances judged by physicians to be appropriate. □

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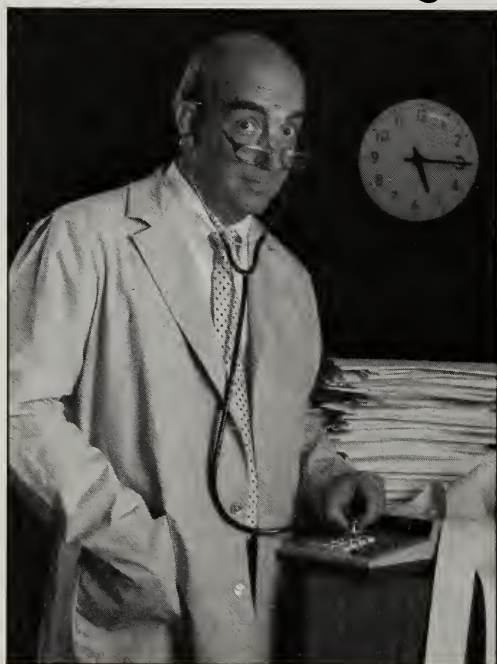
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EMILIE MELANIE VIETT RUNDLETT, M.D.: SOUTH CAROLINA'S FIRST LADY MEDICAL GRADUATE

WILLIAM D. SHARPE, M.D.*

On my first day on rotation through the contagious disease service at the Jersey City Medical Center late in the 1950s, I met an immensely dignified elderly lady physician who had a superficial—but *only* a superficial—resemblance to Aunt Pittipat Hamilton in *Gone With the Wind*. She didn't fool me—I'm half southern, and I know that these elderly ladies with their dotted Swiss dresses and cameo brooches are really made of barbed wire and harness leather. We became friends at first sight.

Emilie Melanie Viett was born in Charleston on January 30, 1876, though she later shaved two years off her age and claimed 1878. Her father, Emil T. Viett, of Alsatian stock, was an architect and a Confederate veteran. Her mother was of old Charleston Huguenot stock. Emilie grew up "not far" from the Battery. She went to Normal School but refused to be formally presented to society—"silly fools"—and briefly taught what amounted to nursery school.

In the fall of 1898, Emilie registered eighth in the 1898-1899 class book, just ahead of L. Rosa Hirschman, which makes Emilie the first woman to enter the Medical College of the State of South Carolina. The 1899-1900 register for her second of three years of medical school gives her age as 22 and the "Remarks" column lists premedical preparation as "High School and Converse College." Her classmates ranged in age from 19 to 28, but most were 19 or 20. For 1900-1901, the tuition fee was \$85.00. It would be splendid but incorrect to claim that Emilie was an outstanding student. Her class of 1901 maintained a general average of 60 percent and the passing grade was 50 percent. Emilie's average was 72.1 percent. Her best grade was in didactic surgery (84%), her worst was in chemistry, urinology and hygiene (60%). She was a good solid student, and got her degree without difficulty, graduating Doctor of Medicine on April 2, 1901.¹

At the time, several years of apprenticeship with a practicing physician were required before admission to medical school. Emilie's preceptor, Dr. John Forrest, lived at 10 King Street in Charleston. Born in Charleston in 1838, he was graduated at the University of Edinburgh in 1859 and returned to Charleston where he studied law. Captured during service as a Confederate ordnance officer, he escaped to Scotland and did not return to Charleston until 1877. He then married and, aged 40, began to study medicine. In 1904, The R. L. Bryan Company, of Columbia, S. C., published his *A Practical Compend of Materia Medica and Therapeutics*. Professor of Materia Medica and Therapeutics at the Medical College of the State of South Carolina, he must have had unusually progressive views of education for women, because he was preceptor for both Emilie M. Viett and Anabella K. Prentiss, a later graduate. He died in 1916.

Like her classmate, Rosa Hirschman Gantt, Emilie went to New York for postgraduate training which, in 1901, was very informal and consisted largely of preceptorships and in assisting senior physicians. Hospital internships were scarce and highly competitive; most young physicians then entered practice without formal clinical training beyond medical school.

Henry Albert Rundlett, a graduate of Harvard Medical School in 1887, lived at 505 West 142 Street, New York, and was an assistant dermatologist at the West Side Dispensary, 328 West 42 Street, where Emilie was working. They soon married, but their only child—a son—died in infancy, and Dr. Henry Rundlett himself died on March 8, 1904. Emilie was a young widow, far from home, and very much on her own.²

On June 19-20, 1906, Emilie was in Trenton, where she took the regular (as distinct from the homeopathic) examination of the State Board of Medical Examiners of New Jersey. She stated under oath that she had been born January 30, 1876, at Charleston, South Carolina; that she lived

* 62 University Court, South Orange, NJ 07079.

EMILIE VIETT RUNDLETT

at 319 West 26 Street, New York; and that she planned to practice in New Jersey. Her preliminary education had been at the Memminger Normal School, in Charleston, South Carolina, 1888-1892, and she had been granted the required preliminary certificate by the State Superintendent of Public Instruction of New Jersey on February 17, 1905. This was the first time that she had taken the examination, and a longhand entry in the State Board's register states, "This certificate is issued under the statutory exemption for graduates in medicine prior to 1903, who have had at least five years of continuous and reputable medical practice since graduation." She had attended "four" courses of six months each at the Medical College of the State of South Carolina from October 1897 through April 1901—actually, she registered for her first year of a three-year course in the fall of 1898, not 1897—and was graduated M.D. on April 2, 1901. The record is silent as to any formal hospital training after her graduation. She had practiced from 1901 to 1905 at the West Side German Dispensary, 328 West 42 Street, and as assistant to Dr. L. F. Garrigue, 210 West 40 Street. Her two character witnesses were Drs. Katherine Porter, 149 William Street, Orange, N. J., and E. Reissman, 125 William Street, East Orange, N. J. Her average on the licensing examination was 81 percent, and her grades ranged from 70 to 93 percent. She was granted New Jersey license number 2201 on July 3, 1906.³

Medical directories for 1908 and thereafter list Dr. Emilie Viett Rundlett—she always used her full name—in practice at 310 Palisade Avenue, Jersey City; in 1911 at 1 Booraem Avenue; and after 1914, at 79 Prospect Street. In 1937, she appears as Director of the Jersey City Medical Center Isolation Hospital. Between 1950 and 1955, she gave up her Prospect Street office, and while retaining her hospital position, lived at 50 Rainbow Trail, Denville, Morris County, keeping a small apartment at the Fairmount Hotel in Jersey City.

Jersey City is approximately 20 minutes by subway—"The Tubes"—from midtown Manhattan, and 12 minutes from the financial district. The opening of subway service under the Hudson River in 1905 brought Jersey City, and its medical community, into close contact with Manhattan. She maintained ties with the Willard Parker Contagious Disease Hospital, and conducted a general

practice in Jersey City, with particular interest in the diseases of women and children.

She became a distinguished and widely respected physician, and was in demand as a consultant in the care of the infectious diseases of infants and children. An astute bedside clinician, she was a master of the small surgical techniques required for small patients, including endotracheal intubation using her own set of sterling silver O'Dwyer's tubes. This art seems to have been lost, and after her departure, extremely difficult surgical tracheostomies were performed on small patients with laryngeal diphtheria and measles tracheitis whom Emilie would easily have intubated.⁴ In collaboration with two Jersey City Medical Center pathologists, Emilie published one of the pioneer reports both of the diagnostic significance of cerebrospinal fluid glucose levels and of the efficacy of sulfadiazine in the treatment of meningococcal meningitis. They concluded that the initial cerebrospinal fluid glucose content was inversely proportional to the virulence of the organism; that glucose levels increased as the number of organisms decreased and was therefore a favorable sign; and that no deaths occurred among 23 patients treated with sulfadiazine whose cerebrospinal fluid glucose levels were monitored.⁵ This paper appeared in 1942, when Emilie was 66.

She was elected President of the Medical Staff of the Jersey City Medical Center in 1939, the first woman to hold such a position in New Jersey, and at the time, the Jersey City Medical Center had a stature fully equivalent to that of the old Bellevue or Philadelphia General Hospitals. (She described how carefully she signed her name to the house staff certificates, "they were hand lettered and I didn't want to spoil any!") In 1940, she was elected a Fellow of the American College of Physicians, an honor of which she was proud. She visited hospitals throughout northern New Jersey as a consultant on the treatment of bacterial meningitis, and was one of a minority of physicians who encouraged the Australian nurse, Sister Kenny, in her approach to the care of patients with infantile poliomyelitis. When Seton Hall University organized, in 1956, New Jersey's first modern medical school, she was a founding Clinical Professor of Medicine. On June 9, 1956, Seton Hall University, in South Orange, celebrated its centennial in part by conferring honorary degrees on eighteen distinguished New Jersey



FIGURE 1. The Jersey City Medical Center where Dr. Viett Rundlett spent most of her career.

citizens, including three physicians. One of these was Emilie, who thereupon became Doctor of Laws *honoris causa*.

Emilie had warm memories of medical school in Charleston just as the century was turning. "We had the best men in town as teachers, and the Roper Hospital was wonderful!" "I really had no problems, though there were only two girls in our class. One of the students in anatomy cut part of his cadaver off—you can guess which part—and put it in the pocket of my pinafore. I knew that if I screamed, I was done, so I gritted my teeth, took it in my hand and marched right up to him. 'Is this yours? You might need it.'" She rode a bicycle to and from school, and had a corduroy cycling dress. Once, as night was falling, to light the cycle's acetylene lamp, she imitated her male classmates, who habitually struck kitchen matches across their corduroy-covered "behinds" to light their pipes ("nobody smoked cigarettes then—I had a young man I bought a calabash pipe for!"). Light shining, she mounted her wheel and pedaled off into the dusk. Once home—"how they found out so fast, I don't know"—her mother had already heard that Emilie had done the unspeakably vulgar: *she had struck a match across her derrière!* "I tried to play innocent, but mother saw the mark in the corduroy. You'd think I'd been seen in a slinky dress walking the Battery, smiling at strange men. I almost had to leave medical college."

When I knew her, she was an old-fashioned and courtly, but very experienced, clinician. While on her service, I admitted two black lads, 10 and 12, just back from visiting their grandma in rural

Mississippi, with high fevers, diarrhea and slow pulses. I had read about but had never seen typhoid fever. Until then. Blood and stool cultures had been planted, intravenous fluids started—Emilie referred to an intravenous drip as a "clysis"—and I was debating about chloramphenicol. I called for help, and Emilie came in by police car. As we walked toward the cubicle containing the two boys, I commented on my uncertainties and on my fear of aplastic anemia. She marched up to the younger lad, looked at him, felt his pulse, pinched his skin, and sniffed. "Order the chloramphenicol." I asked how she knew. Grabbing my arm, she said, "Hot skin, slow pulse and they smell like mouse poop." The cultures yielded *S. typhosa*, and the boys were soon better.

Medical students then as now thought that anyone thirty was already doubtful, and that cerebration stopped at forty. We divided teaching chores; I did the pathology, her excellent associate and distinguished successor, Dr. Dominic Mauriello, did current diagnosis and treatment, and Emilie talked about the pre-antibiotic natural histories of disease. Wide-eyed students listened to her accounts of the 1919-1920 influenza pandemic: "We ran out of death certificates . . . Once they turned purple, lilac really, they always died . . . The problem was keeping them from getting out of bed. Once they tried to get out of bed, that was a very bad sign."

She was certainly no feminist, and would likely have been infuriated by some of the lunatic fringe of the women's libbers. She had a strong sense of *persona*. On one very memorable day, an intern resented the idea of an 80-year-old woman as an attending physician and, remarkably ill-bred, persisted in addressing her as "Mrs. Rundlett." The first time she heard this, Emilie was surprised; the second time, annoyed; but the third time! "I am old enough to be your grandmother, but I worked very hard to get to be called 'doctor,' and if you want to finish your internship here, do so." He did so thereafter, but did not stay on as a resident.

She had a sense of humor. One quiet, but hot and humid, day, four medical students had finished their chores in the isolation ward, and were staring longingly at the large Hubbard physiotherapy tank, left over from the 1930s poliomyelitis epidemic. I asked whether they understood the principle whereby water facilitates the motion

EMILIE VIETT RUNDLETT

of denervated muscles, but they preferred to be convinced. On with the taps, and soon four medical students were happily splashing about, naked as jaybirds. Emilie's footsteps drew nigh, and her clear voice rang out, "Shut your eyes boys, I'm coming through." One of the house staff had acquired the nickname "Oberon" because of his, for that time and place, advanced sexual ideas, and Emilie asked me what I thought. I said that I didn't think anything about it. She replied, "Maybe so, but if I were a younger woman, he certainly wouldn't interest me."

She was a gracious hostess. I used to take the students out to dinner at the end of their rotations, and naturally invited Emilie to a fish-fry at a local watering spot, all I could afford. She was there early, and preferred her Manhattan 1:1 sweet vermouth:bourbon, with two cherries. After the next group, she jumped the gun; when I asked the students, they said that Dr. Rundlett had already invited them to her hotel. And so she had, for room service. Even in her little hotel pied-à-terre, she maintained a standard of dignified hospitality that Charleston would have applauded. She was a very kind woman, and contributed a scholarship to the new medical school so that a "colored" could go to medical school.⁶

We kept in touch after I left Jersey City for a residency in Philadelphia, and I always visited her when I returned to that old industrial town. When I heard that she was ill, I made a trip up to see her during what proved to be her last illness. She refused to be treated, feeling that she had lived long enough. She told me that she always appreciated that I regarded her as a senior colleague, not as a fussy old woman. She also told me that I was a good doctor, well informed and thorough, but that I should not be so sarcastic and abrupt, and that I should be kinder to people. I never saw her again.

She died November 17, 1959, in the hospital that she served so well so long, and is buried in Jersey City. There were no survivors.

ACKNOWLEDGMENTS

I thank Dr. Dominic A. Mauriello, Jersey City, for his personal recollections of our mutual friend. Dr. W. Curtis Worthington, Jr., and Mrs. Anne Donato, of the Medical University of South Carolina, provided Dr. Rundlett's undergraduate records. Seton Hall University Archives were productive, and what can be written about the

medical history of metropolitan New York without the great Library of the New York Academy of Medicine? □

REFERENCES

1. Class Ledgers, Medical College of the State of South Carolina, 1898-1901, in the Waring Historical Library of the Medical University of South Carolina.
2. New York State Medical Association, *The Medical Directory of New York, New Jersey and Connecticut*. 1902 et seq.
3. Letter to W.D.S. from Charles A. Janousek, Executive Secretary, New Jersey State Board of Medical Examiners, Trenton, February 24, 1987, who kindly sent a photocopy of the Register containing the record of Dr. Rundlett's licensure data.
4. Letter to W.D.S. from Dominic A. Mauriello, M.D., Jersey City, September 3, 1987.
5. Emilie Rundlett, A. M. Gnassi and Preston Price: Meningococcal Meningitis: Prognostic Significance of the Spinal Fluid Sugar. *J.A.M.A.* 119:695-696, 1942.
6. Emilie referred to black people as "colored." Only those who have funded a scholarship for anybody should feel free to criticize this generous bequest.

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Editorials

Among the past year's innovations in our society was the formation of an active Medical Ethics Committee. Already, "opinions" on a number of matters are being developed. These "opinions" are based on moral, ethical, and professional aspects of the "hard choices" which challenge physicians, rather than on primary legal, economic, or political considerations. Presented here is the first of these "opinions". Others will be promulgated periodically.

—CSB

MEDICAL ETHICS COMMITTEE OF THE SCMA OPINION ON S. C. DEATH WITH DIGNITY ACT

Widely accepted traditional and contemporary principles of medical ethics require that the attending physician know whether a terminally ill patient consents to or refuses treatment which will delay death. When such a patient is incompetent to decide or unable to communicate a decision, a previously executed living will or other form of specific written advance directive is a truer representation of the patient's wishes than substituted judgment by the patient's family or legal representative.

Because South Carolina has a living will statute, it is ethically proper for a physician to discuss with a patient the Death with Dignity Act and its implications under any circumstances judged by the physician to be appropriate. The physician may elect to provide his patients with educational materials, including copies of the S. C. Living Will or the Act of which the Will is a part.

As in all aspects of medical practice, before advising patients the physician has a duty to be knowledgeable about the subject, including the use of a living will. The physician also may recommend that the patient consult with an attorney or other counsellor.

Certain aspects of the current statute which diminish the effectiveness of the law in achieving its purposes justify on ethical grounds efforts by physicians to facilitate changing the law.

Medical Ethics Committee:

Michael F. Harrah, M.D.

Frederic G. Jones, M.D.

Cecil Quattlebaum, M.D.

John M. Roberts, M.D.

Robert M. Sade, M.D.

Donald E. Saunders, Jr., M.D., Chairman

J. Richard Sosnowski, M.D.

STATISTICS

When I first came to Clemson to practice medicine, we moved into a house that was known as the Dr. Billy Watkins home. Therefore, I heard many a tale about Dr. Watkins from old-time patients and physicians.

Dr. Watkins was a superior physician, well-trained and dedicated to his patients. In his early years in Clemson he developed a large practice, particularly among the elderly who were already beset by their final illnesses. He was hurt professionally and personally by a story about the local

graveyard, which became known as the "Dr. Billy Watkins graveyard," this being due to the fact that so many of his patients were buried there. This sort of thing can be devastating to a doctor.

I well recall the greatest compliment I ever received. Graves Duckett, our local undertaker, laughingly told me a couple of years after Dr. Bob Burley and I had come to town, "You and Dr. Burley have just about put me out of business the last couple of years."

Dr. C. C. Horton of Pendleton explained the

story of "Dr. Billy Watkins' graveyard." He said, "Dr. Watkins was a superior physician and had success in his practice right away. Then everyone in the community who was terminally ill went to him for help. Of course, there was little he could do for many of these patients, and they passed on in the natural course of their illness. When there was a funeral, people would ask who was the doctor. That is how it became known as "Dr. Billy Watkins' graveyard;" he just had all the tough cases.

For instance, I have a patient now, in her 70s and in excellent health. There is a scar on her right chest. When she was a child, she had near fatal pneumonia and her right lung space filled with pus. In those days this could well have been her death warrant. In the old home of Ashtabula, on a kitchen table, Dr. Billy Watkins opened up her chest, removed part of a rib, drained the pus, and saved her life. This patient is still a long way from "Dr. Billy's graveyard."

If the federal government had been keeping statistics on Dr. Watkins, it would have been obvious that he had a higher mortality rate than any other doctor around. All of this brings us to the recent statistics released by Medicare on the mortality rates of certain hospitals.

My daddy always said, "Son, there are three kinds of liars; plain liars, damn liars, and statisticians, and of these the last is the worst." We should always be careful about statistics when they concern individuals, particularly individual patients. A patient does not die 26 percent or live 74 percent. People are individuals; all will respond to a given illness differently. The government, unfor-

tunately, has a propensity to put people in one boiling pot and attempt to stamp them out in one image. The more power a government has, the more apt they are to try to stamp us all out in the same image, "for our own good"—or so they think. Jefferson warned us about this sort of thing from the beginning, and John Stuart Mill summed it all up when he said, "Whatever crushes individuality is despotism, by whatever name it may be called."

So five smaller county hospitals have a slightly higher percent of Medicare patients dying than do the larger teaching centers. It does not take a genius or a computer to figure this out. Those patients who can be helped where elaborate facilities are available are sent to these hospital centers and are most often helped. Those patients for whom little further can be done (and we all come to this point sooner or later) are mostly left in their smaller county hospitals. In my opinion it is best to die at home, but depending on circumstances, this is not always possible. Hence, the absolute necessity of these smaller hospitals. Those in the United States government who put out such distorted statistics as this are not doing anyone any good. They are only confusing people and could well end up destroying smaller county hospitals which are often already existing on a shoestring.

We must all remember that medical care is an individual thing, between the patient and the doctor. Doctors, not hospitals, treat patients.

WILLIAM HARVEY HUNTER, M.D.
One Hunter Court
Clemson, S.C. 29631

LETTER TO THE EDITOR

TO THE EDITOR:

OPEN LETTER TO THE S. C. PRO

Dear Doctor DuBose:

As Chairman of the Governmental Relations Committee of the Charleston County Medical Society which concerns itself with South Carolina PRO matters, I feel compelled to write an open letter in *The Journal of the South Carolina Medical Association* to help generate some dialogue with your organization. The President of Charleston County Medical Society and our committee have 20 questions that we would like answered in detail in the state medical journal so as to get the widest possible discussion of these pertinent medical issues. Our questions are as follows:

- (1) When is the South Carolina PRO going to stop denials for clearly medically necessary admissions—examples—denial of admission for ventricular tachycardia; denial for upper G.I. bleeding with hematocrit of 27 in an 87-year-old male; and denial for a stroke in evolution?
- (2) If South Carolina physicians follow your recommendations as in question (1), will the South Carolina PRO take full medical and legal liability in these cases?
- (3) When is the South Carolina PRO going to identify the name, address and phone number of a physician reviewer who makes the initial hospital denial? Currently, the system allows the physician who has made this denial to remain anonymous.
- (4) When is the S. C. PRO going to hire someone in its Charlotte office who actually can give professional answers when a South Carolina physician calls to ask questions about denials from the PRO?
- (5) When will the South Carolina PRO be willing to spell out in clear ENGLISH the reason for a denial instead of computer generated jargon?
- (6) When will the S. C. PRO allow all South Carolina physicians and Medicare recipients to see the details of its PRO contract with H.C.F.A.?
- (7) When is the South Carolina PRO going to

start considering the needs of its Medicare population instead of its contract with H.C.F.A.?

- (8) When is the South Carolina PRO going to stop using its enormous advantage of retrospective analysis in considering admissions? A corollary question to consider is—when is the PRO going to consider that South Carolina physicians are handling the cases as they happen and do not know the final outcome?
- (9) When is the South Carolina PRO going to hire a full complement of competent physicians?
- (10) When is the South Carolina PRO going to start to deal honestly with all physicians and hospitals? There are two recent cases in which South Carolina physicians received denial letters for hospitalizations. Then, before either physician could write a rebuttal, they each received a letter from the South Carolina PRO saying that a physician had reviewed their letter (which they had not yet written) and rejected it.
- (11) When is the PRO going to stop raising so many “quality issues” that prove to be false?
- (12) When is the PRO actually going to answer the letters of South Carolina physicians? There are many requests for personal letters of explanation. If anything is answered at all, it is always computer generated.
- (13) When is the South Carolina PRO going to develop new guidelines for medical necessity for hospital admissions? The present set is not working.
- (14) When is the South Carolina PRO going to understand that medical judgement is a key part of medical care? We physicians cannot blindly follow any cookbook formula that may be devised.
- (15) When is the South Carolina PRO going to stop recommending to physicians that

- they practice sub-standard medical care in the interest of saving H.C.F.A. money?
- (16) When is the South Carolina PRO going to actually follow its own guideline concerning hospital admissions? A recent rejection involved an admission with a glucose of 374 for uncontrolled diabetes, despite a South Carolina PRO severity of illness criterion ruling glucoses over 350 are acceptable for admission.
 - (17) When is the South Carolina PRO going to stop wasting the time and energy of the physicians of South Carolina with its clearly inappropriate denials? It is our position that there is no validity to a majority of the denials made by the PRO.
 - (18) When is the South Carolina PRO going to actually read the letters from the physicians who write first denial letters? There is good evidence that the denials are clearly refuted on the first letter and the computer generated jargon shows no evidence that the material submitted by the physicians was actually read.
 - (19) When is the South Carolina PRO going to recognize that a different set of hospital admission criterion (less stringent than the present one) is needed for Medicare patients over 75 and those who are in skilled nursing homes?
 - (20) If the South Carolina PRO cannot answer questions 1-19 or satisfy our demands in a forthright manner, will the South Carolina PRO consider giving up its PRO contract with H.C.F.A. in the interests of all South Carolina Medicare recipients, providers, and hospitals?

We would like your response in detail to each of our questions.

Sincerely,

DON A. SCHWEIGER, M.D., *Chairman*
Governmental Relations Committee and

R. RANDOLPH BRADHAM, M.D., *President*
Charleston County Medical Society
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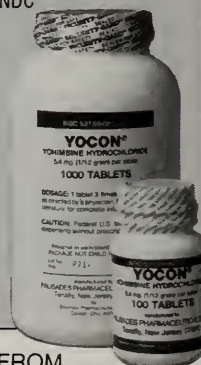
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THE JOURNAL

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ONE HUNDRED FORTIETH ANNUAL MEETING

THE OMNI HOTEL AT CHARLESTON PLACE
CHARLESTON, SOUTH CAROLINA
APRIL 27-MAY 1, 1988

The 140th Annual Meeting of the South Carolina Medical Association celebrates eight consecutive years in Charleston and the second year at the Omni Hotel at Charleston Place.

Details of the meeting have been mailed to all physicians in the state and a record attendance is expected. If you have not received information including pre-registration forms and hotel reservation cards, call the Headquarters office at 798-6207 or use the form elsewhere in this journal. For SCMA members, again this year there is no registration fee. On-site registration again will utilize computers and word processors, but pre-registration is encouraged to avoid delays.

The House of Delegates meets in full sessions on Thursday morning, April 28, and Sunday morning, May 1. Speaker of the House, *O. Marion Burton, M.D.*, will preside with the assistance of Vice Speaker, *Benjamin E. Nicholson, M.D.* Reference Committee meetings are scheduled for Thursday afternoon.

A full schedule of scientific sessions on many topics of interest has been planned, with a major focus on medical ethics. Workshops begin on Wednesday afternoon and continue each afternoon thereafter through Saturday. General sessions are scheduled for Friday and Saturday mornings on the major topics of "AIDS: Ethical Considerations" and "Diabetes." Consult the Schedule of Events which follows for details on all programs.

Special guests for this annual meeting include *James E. Davis, M.D.*, President-Elect of the American Medical Association, and the SOCPAC luncheon speaker, *Mr. Charles F. Rund*, Presi-

dent of Charleton Research, San Francisco, California.

The second Leonard W. Douglas, M.D., Memorial Lecture, established by the S. C. Institute of Medical Education and Research, will feature as guest speaker *Mark Siegler, M.D.*, of the University of Chicago. He will speak at the General Membership meeting on Thursday morning on "Why Should Physicians Take a Lead in Clinical Ethics in the 1980's?"

The SCMA Auxiliary will hold its Annual Meeting concurrently with the SCMA, and in addition to the meeting of the Auxiliary House of Delegates, many special activities have been planned. A record number of specialty societies will be holding concurrent meetings. Again this year, Mead Johnson Nutritional Division has organized and will provide the prizes for a golf tournament on Friday afternoon.

The SCMA Board of Trustees will meet on Wednesday, April 27, and at breakfast each day to consider business which arises during the House of Delegates meeting.

This issue of *The Journal* contains those reports, Resolutions and other information available at publication deadline. Additional reports received after this issue has gone to press will be included in the Delegates Handbooks which will be mailed prior to the meeting. Delegates are asked to bring their handbooks to the meeting or to pass them along to Alternate Delegates if they are unable to attend.

—JD

ONE HUNDRED FORTIETH ANNUAL MEETING

SCHEDULE OF EVENTS

Wednesday, April 27, 1988

TIME/LOCATION	TOPIC
7:30-8:30 am Suite 2J	SCMA Board of Trustees Breakfast
8:30 am-12:15 pm Willow I Room	SCMA Board of Trustees Meeting
8:30 am-5:30 pm Colleton Room	S. C. State Board of Medical Examiners Meeting
10:00 am-12:00 Noon Suite 2H	SCMAA/SCIMER Scholarship Interviews
11:30 am-7:00 pm 2nd Floor Grand Hall	SCMA Registration—Open
12:15-1:30 pm Willow II Room	SCMA Board of Trustees Luncheon
12:30-5:00 pm Jenkins/King Room	SCMA Hospital Medical Staff Section Luncheon & Meeting
1:00-3:00 pm Edmunds Room	SCMA Young Physicians' Section Luncheon & Meeting
1:00-5:00 pm Dogwood/Cypress/Live Oak Ballroom and Grand Hall	Exhibitors Setup
1:00-5:00 pm Suite 2G	Auxiliary Registration—Open
1:30-5:00 pm Willow I Room	SCMA Board of Trustees Meeting
2:00-3:00 pm Suite 2F	Auxiliary Committee Meeting
2:00-4:00 pm Suite 2H	SCMAA/SCIMER Scholarship Interviews
3:00-4:00 pm Suite 2F	Auxiliary Committee Meeting
3:00-5:00 pm Drayton Room	Workshop: "Ethics In South Carolina: A Proposed New Code for SCMA, and Society's Assault on Medical Ethics" Robert M. Sade, M.D., MUSC; Michael F. Harrah, Greenville; Douglas MacDonald, Ph.D., Furman University
3:00-5:00 pm Hampton Room	Workshop: "When to Refer the Cardiac Patient" Grady H. Hendrix, M.D., MUSC; Bruce W. Usher, M.D., MUSC

SCHEDULE OF EVENTS
Thursday, April 28, 1988

TIME/LOCATION	TOPIC
7:00 a.m. Meet in Lobby	Health Walk with "Jessie"
7:00 am-5:00 pm 2nd Floor Grand Hall	SCMA Registration—Open
7:00-8:00 am Suite 2J	SCMA Board of Trustees Breakfast
7:00-8:00 am Hampton Room	SCMA Past Presidents' Breakfast
7:00-8:00 am Suite 2F	Specialty Society Delegates Meeting
7:30-8:30 am Booths 22 & 42	Coffee
7:30 am-5:00 pm Dogwood/Cypress/Live Oak Ballroom and Grand Hall	Exhibits Open
8:00 am-5:00 pm Suite 2G	Auxiliary Registration—Open
8:00-9:00 am Drayton Room	Auxiliary Continental Breakfast
8:00-11:30 am Willow and Magnolia Ballrooms	SCMA House of Delegates
8:30 am-5:30 pm Colleton Room	S. C. State Board of Medical Examiners Meeting
9:45-10:45 am Booths 22 & 42	Coffee Break (Compliments of Fenwick Hall Hospital)
10:00-11:00 am Riley Room	MUSC Medical Alumni Board Meeting
10:00 am-12:00 Noon Jenkins/King Room	Auxiliary Executive Board Meeting
12:00-1:30 pm Suite 2F	SCMA Medical Ethics Committee and Guest Program Participants Meeting & Luncheon
12:30-1:30 pm Drayton Room	Reference Committee Chairmen's Luncheon
12:30-2:00 pm Wickliffe House	Auxiliary Past Presidents' Luncheon
12:45-3:00 pm Magnolia Ballroom	MUSC Alumni Luncheon

SCHEDULE OF EVENTS
Thursday, April 28, 1988 (continued)

TIME/LOCATION	TOPIC
1:30-3:00 pm Hampton, Edmunds, Ashley Cooper Rooms and Suite 2J	SCMA Reference Committee Meetings (Specific room assignments will appear in Delegates Handbook)
2:00-3:00 pm Booths 22 & 42	Coffee Break (Compliments of ADDlife Addiction Services, North Greenville Hospital)
2:00-5:00 pm Willow Ballroom	Plenary Session: "Sports Medicine" Moderator: W. Ray Henderson, M.D. "Rehabilitation of the Lower Extremity in Athletes" Messrs. Carl Gibson, Andrew Massey, Andrew Clawson, Scott Douglas "Psychological Aspects of Return to Competition" Richard K. Harding, M.D.
3:00-5:00 pm King Room	Workshop: "The Physician and Euthanasia" Mark Siegler, M.D., University of Chicago; Nora K. Bell, Ph.D., University of S. C.
3:00-5:00 pm Drayton Room	Scientific Workshop: "Breast Cancer" Frederick L. Greene, M.D., USC School of Medicine
3:00-5:00 pm Jenkins Room	Scientific Workshop: "Immunization and Allergy" Frederick H. Leffert, M.D., Greenville
3:00-5:00 pm Fenwick, Ashley Cooper Rooms and Suite 2F	SCMA Reference Committee Meetings (Specific room assignments will appear in Delegates Handbook)
6:00-7:30 pm Magnolia Ballroom	SCMA Reception Honoring Delegates, Alternates, Speakers and Exhibitors

Friday, April 29, 1988

TIME/LOCATION	TOPIC
7:00 am Meet in Lobby	Health Walk with "Jessie"
7:00 am-12:00 Noon Suite 2G	Auxiliary Registration—Open
7:00 am-5:00 pm 2nd Floor Grand Hall	SCMA Registration—Open
7:30-8:30 am Suite 2J	SCMA Board of Trustees Breakfast
7:30-8:30 am Drayton Room	Auxiliary Continental Breakfast
7:45-8:45 am Booths 22 & 42	Coffee

SCHEDULE OF EVENTS
Friday, April 29, 1988 (continued)

TIME/LOCATION	TOPIC
8:00-11:30 am Willow Ballroom	General Scientific Session: "AIDS: Ethical Considerations" Moderator: Charles S. Bryan, M.D., USC School of Medicine "Infected Disease/Epidemiology Update" Charles S. Bryan, M.D. "Philosophical Background for AIDS Ethical Issues" Nora K. Bell, Ph.D., USC Debate I: "A physician may not ethically refuse to treat a patient whose condition is within the physician's current realm of competence solely because the patient is seropositive." Donald E. Saunders, Jr., M.D., USC School of Medicine John M. Roberts, M.D., MUSC Debate II: "The seropositive physician should withdraw from direct patient care?" Frederic G. Jones, M.D., Anderson Cecil Quattlebaum, M.D., Greenville
8:00 am-5:00 pm Dogwood/Cypress/Live Oak Ballroom and Grand Hall	Exhibits Open
8:30-11:00 am Colleton Room	Sports Medicine Committee Breakfast Meeting
9:00-10:30 am Suite 2F	Prof. Liability Committee Meeting
9:00 am-12:30 pm Magnolia Ballroom	Auxiliary House of Delegates
10:30-11:30 am Suite 2F	SCIMER Board Meeting
10:30-11:30 am Booths 22 & 42	Coffee Break (Compliments of Charter Rivers Hospital)
12:00 Noon Seabrook Island's Crooked Oaks Course	Golf Tournament—Organized by and Prizes Awarded by Mead Johnson Nutritional Division
12:00 Noon-1:30 pm Suite 2J	Annual Meeting of the South Carolina Medical Care Foundation and Board of Directors Luncheon
12:30-2:00 pm Fenwick Room	Editorial Board Luncheon
12:30-2:30 pm Colleton Room	S. C. Chapter, American College of Emergency Physicians Luncheon

SCHEDULE OF EVENTS
Friday, April 29, 1988 (continued)

TIME/LOCATION	TOPIC
1:00-2:30 pm Willow Ballroom	Auxiliary Luncheon and Fashion Show
1:00-3:00 pm Magnolia Ballroom	<p>"Cardiovascular Risk Factors"</p> <p>Moderator: Grady H. Hendrix, M.D., MUSC; Christie B. Hopkins, M.D., USC School of Medicine; Maria Lopez-Virella, M.D., MUSC; Ernest McCutcheon, M.D., USC School of Medicine</p>
1:00-5:30 pm Edmunds Room	<p>S. C. Dermatological Meeting and Scientific Session:</p> <p>"Disorders of Hair Growth"</p> <p>Elise Olsen, M.D., Duke University Medical Center</p> <p>"Insurance and HMO Issues"</p> <p>Ashby Jordan, M.D., Blue Cross and Blue Shield, Columbia</p> <p>"Vitamin A: Cancer in the Skin"</p> <p>Peter M. Elias, M.D., VA Medical Center, San Francisco</p>
1:00-4:00 pm Jenkins Room	<p>S. C. Psychiatric Association Scientific Session:</p> <p>"Advances in the Diagnosis and Treatment of the Anxiety Disorders"</p> <p>"Panic Disorder"</p> <p>James C. Ballenger, M.D., MUSC</p> <p>"Differential Diagnosis of Anxiety Disorders"</p> <p>Robert B. Lydiard, M.D., Ph.D., MUSC</p> <p>"Generalized Anxiety Disorder"</p> <p>Jerrold Rosenbaum, M.D., Harvard Medical School</p> <p>"Obsessive Compulsive Disorder"</p> <p>Linda S. Austin, M.D., MUSC</p>
2:00-4:30 pm King Room	<p>S. C. Oncology Society Meeting and Scientific Session:</p> <p>"Multi-Modality Treatment of Gynecological Malignancies"</p> <p>Moderator: Mitz M. Martin, M.D., Greenville</p> <p>"The Use of Radiation Therapy in GYN Malignancies"</p> <p>Luther W. Brady, M.D., Hahnemann University</p> <p>"The Use of Surgery and Chemotherapy in GYN Malignancies"</p> <p>William T. Creasman, M.D., MUSC</p>
2:30-3:30 pm Booths 22 & 42	Coffee Break (Compliments of Pfizer Laboratories)

SCHEDULE OF EVENTS
Friday, April 29, 1988 (continued)

TIME/LOCATION	TOPIC
2:30-5:30 pm Drayton Room	S. C. Chapter, American College of Emergency Physicians Meeting and Scientific Session: "Toxicology: Pearls and Pitfalls" Moderator: Jack K. Niles, M.D., Richland Memorial Hospital "Carbon Monoxide Poisoning" Robert L. Bartlett, M.D., Richland Memorial Hospital "Tricyclic Antidepressants" Lester M. Haddad, M.D., Beaufort "Sedative Hypnotic Overdoses" Terrance P. McHugh, M.D., Richland Memorial Hospital "Poison Control Center Networking" M. John Stewart, M.D., Richland Memorial Hospital
3:30-5:00 pm Colleton Room	Risk Management Workshop "Prevention of Claims and Conflicts" Mr. Richard Jones, Gainesville, Fla.
3:30-5:00 pm Ashley Cooper Room	Scientific Workshop: "Antibiotic Update" Charles S. Bryan, M.D.
3:30-5:00 pm Hampton Room	Urology Workshop: "ESWL" (Lithotripsy) of Urinary Stones" P. Whitt Kinder, M.D., Columbia "Treatment Plans for Impotence, Including Injection Therapy" Robert Nelson, M.D., MUSC "Prostatic Ultrasound and the Role of PSA in Urological Diagnoses" J. Ernest Lathem, M.D., Greenville
4:30-6:00 pm Sebring-Aimar House C.1840—MUSC	MUSC Open House (Continuous Shuttle Service will be provided)
5:00-7:00 pm Fenwick Room	Duke Alumni Reception
5:30-6:30 pm Suite 2G	S. C. Chapter, American College of Emergency Physicians Reception
5:30-7:00 pm Home of Dr. & Mrs. A. Bert Pruitt, Jr.	Bowman-Gray Alumni Reception
6:00-7:30 pm Magnolia Ballroom	SCMA Reception (Compliments of C&S Bank/South Carolina)

SCHEDULE OF EVENTS
Friday, April 29, 1988 (continued)

TIME/LOCATION	TOPIC
7:00 pm	<i>MUSC Reunions</i>
Suites 2H and 2J	March Class of 1943
Ashley Cooper Room	December Class of 1943
Edmunds and Hampton Rooms	Class of 1948
8:00 p.m.	
Colleton Room	Class of 1953
Jenkins/King Room	Class of 1958
Drayton Room	Class of 1963
Willow I Room	Class of 1968
Willow II Room	Class of 1973

Saturday, April 30, 1988

TIME/LOCATION	TOPIC
7:00 am-5:00 pm 2nd Floor Grand Hall	SCMA Registration Open
7:30-8:30 am Suite 2J	SCMA Board of Trustees Breakfast
7:45-8:45 am Booths 22 & 42	Coffee

8:00-11:00 am Drayton Room	S. C. Association of Neurological Surgeons Breakfast Meeting and Scientific Session: "Brain Death, Organ Donation and DNR Issues" J. Richard Sosnowski, M.D., MUSC; Robert Sade, M.D., MUSC; Stuart Sprague, Ph.D., Anderson
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8:00 am-12:00 Noon Jenkins/King Room	S. C. Chapter American Academy of Pediatrics and S. C. Pediatric Society Meeting and Scientific Session: "Recognition, Evaluation and Treatment of Child Abuse" Ron C. Porter, M.D., USC School of Medicine "Immunization Controversies" Paul V. Catalana, M.D., Greenville "The Moral Art of Pediatrics" Albert H. Keller, Ph.D., MUSC
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8:00 am-12:30 pm
 Dogwood/Cypress/Live Oak
 Ballroom and Grand Hall

Exhibits Open

8:15 am-1:00 pm
 MUSC, Room 402
 Basic Science Building

Annual Meeting S. C. Society of Anesthesiologists

SCHEDULE OF EVENTS
Saturday, April 30, 1988 (continued)

TIME/LOCATION	TOPIC
8:30 am-12:00 Noon Edmunds Room	S. C. Dermatological Association Scientific Session: "Use of Tretinoin In Various Skin Disorders" Peter M. Elias, M.D., VA Medical Center, San Francisco "Diagnosis and Treatment of Bullous Pemphigoid" Walter Ray Gammon, M.D., UNC Chapel Hill "What's New in Dermatologic Surgery" Pearson Lang, M.D., MUSC
10:00-11:00 am Booths 22 & 42	Coffee Break (Compliments of Shearson Lehman Hutton, Inc.)
8:30 am-12:00 Noon Willow Ballroom	General Scientific Session: "Recent Advances in Diabetes Mellitus" Developed in conjunction with and supported by the American Diabetes Association, South Carolina Affiliate Moderator: Leonard Lichtenstein, M.D.
8:30-8:40 am	Welcome and introduction of John Colwell, M.D., MUSC, Presi- dent American Diabetes Association
8:40-9:35 am	"Advances in the Diagnosis and Treatment of Type I Diabetes Mellitus" Jay S. Skyler, M.D., U. of Miami School of Medicine
9:35-10:30 am	"Advances in the Diagnosis and Treatment of Type II Diabetes Mellitus" Derek LeRoith, M.D., Ph.D., NIH, Bethesda
10:30 am	Discussion
10:45-11:00 am	Break
11:00-11:30 am	Moderator: Robert Lindemann, M.D. "Psychological Adaption to Diabetes Mellitus" Kay McFarland, M.D., USC School of Medicine
11:30 am-12:00 Noon	Panel Discussion: "Complications of Diabetes Mellitus" Moderator: John A. Colwell, M.D., Ph.D., MUSC Doctors Skyler, LeRoith, McFarland, Lichtenstein; James C. Thomas, M.D., and Robert Lindemann, M.D.
9:00-11:00 am Ashley Cooper Room	SOC PAC Board Meeting
10:00-11:00 am Hampton Room	S. C. Society of Pathologists Business Meeting

SCHEDULE OF EVENTS
Saturday, April 30, 1988 (continued)

TIME/LOCATION	TOPIC
9:00 am-12:00 Noon Colleton Room	S. C. Radiological Society Meeting and Scientific Session:
9:00-10:00 am	"The Radiologists' Role in Today's Medicine" Emmett Templeton, M.D., Birmingham, Alabama
10:00-10:30 am	"Clinically Valuable Body MRI" Kenneth Spicer, M.D., MUSC
10:30-11:00 am	"MRI of the Head, Neck and Spine" Richard Holgate, M.D., MUSC
11:00 am-12:00 Noon	"Governmental Issues Facing Radiology" Gary Price, ACR, Washington, D. C.
12:00 Noon-1:00 pm Ashley Cooper Room	S. C. Radiological Society Reception
12:45-2:15 pm Magnolia Ballroom	SOC PAC Luncheon Guest Speaker: Charles F. Rund, President of Charlton Research, Inc., San Francisco, CA
1:30-3:00 pm Edmunds Room	"Osteoporosis: Causes, Evaluation and Therapy" Howard R. Nankin, M.D., USC School of Medicine
2:30-4:00 pm Colleton Room	Risk Management Workshop "Effective Chart Reviews/Depositions/Testimony" Moderator: Euta M. Colvin, M.D.
1:00-3:30 pm Drayton Room	S. C. Radiological Society Luncheon and Meeting
2:00-4:30 pm Hampton Room	S. C. Society of Pathologists Scientific Session: "The Use of Flow Cytometry in the Clinical Lab: Present and Future" Sally Self, M.D., MUSC; Mariano LaVia, M.D., MUSC; Ted S. Gansler, M.D., MUSC; Ron D. Schiff, M.D., MUSC; and Jim Flick, M.D., MUSC
2:00-6:00 pm Jenkins/King Room	S. C. Chapter, American Academy of Family Physicians Board Meeting
6:30-7:30 pm Dogwood/Cypress Ballroom	SCMA Presidents' Reception (Compliments of Carolina Physicians Advisory Service)
7:30 pm-12:00 am Willow/Magnolia and Live Oak Ballrooms	SCMA President's Inaugural Banquet (Dancing and Open Bar— Compliments of the S. C. Medical Care Foundation)

SCHEDULE OF EVENTS
Sunday, May 1, 1988

TIME/LOCATION	TOPIC
7:00-10:30 am 2nd Floor Grand Hall	SCMA Registration Open
7:30-8:30 am Suite 2J	SCMA Board of Trustees Breakfast
8:30 am-12:30 pm Dogwood/Cypress and Live Oak Ballrooms	SCMA House of Delegates
12:30-1:00 pm Jenkins/King Room	SCMA Board of Trustees Reorganization Meeting

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PHYSICIANS, SCHEDULE SOME TIME FOR YOUR COUNTRY.

Many physicians would like to devote some time to their country in a local Army Reserve unit. We know that making a weekend commitment can be difficult for most physicians. So it is practical for the Army Reserve units to be flexible about time. It's worth discussing.

Incidentally, in addition to satisfying your own desire to serve your country, there are exceptional opportunities to do something totally different from a day-to-day routine. Opportunities to study new areas of medicine, meet new people in your specialty, and be a part of one of the world's most advanced medical teams.

Discuss the opportunities with our Army Medical Personnel Counselor.

FOR SURGEONS LOOKING FOR A CHALLENGE.

Your challenge could be the Army Reserve unit near you. It's a unit that requires the services of surgeons.

You may wish to explore the challenge of teaching in a major medical center. You may wish to explore the special challenges of your specialty in triage. Certainly you'll be confronted by challenges very different from your daily routine.

You'll also have an opportunity to participate in a number of programs in which you'll be able to exchange views and information with other surgeons from all over the country.

The Army Reserve understands the time demands on a busy physician, so you can count on us to be totally flexible in making time for you to share your specialty with your country. We'll arrange your training program to work with your practice.

To find out about the benefits of serving with a nearby Army Reserve unit, we recommend you call our Army Medical Personnel Counselor.

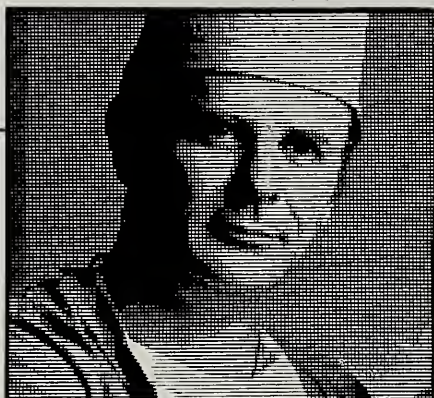
PHYSICIANS, THERE ARE TWO KINDS OF FLEXIBILITY IN THE ARMY RESERVE WE THINK YOU'LL LIKE.

One, time. We know how tough it is for a busy physician to make weekend time commitments. So we offer flexible training programs that allow a physician to share some time with his or her country. We arrange a schedule to suit your requirements.

Two, the opportunity to explore other phases of medicine, to add a different kind of knowledge—the challenge of military health care. It's a flexibility which could prove to be both stimulating and rewarding, with the opportunity to participate in a variety of programs that can put you in contact with medical leaders from all over the country.

See how flexible we can be, call our Army Medical Personnel Counselor.

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BE ALL YOU CAN BE.**



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The Army covers his premiums. Since he's an Army Physician, there are a lot of worries associated with private practice that he won't have to contend with. Like excessive paperwork, and the overhead costs incurred in running a private practice.

What he will get is a highly challenging, highly rewarding experience. The Army offers varied assignments, chances to specialize, or further your education, and to work with a team of dedicated health care professionals. Plus a generous benefits package.

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ELECTIONS 1988

OFFICERS: President-Elect:

Secretary: Elected annually, limited to three consecutive terms. Carol S. Nichols, M.D., elected 1987. Eligible for two additional terms.

Treasurer: Nominated by the Board of Trustees. Elected annually, limited to three consecutive terms. Bartolo M. Barone, M.D., elected 1987. Eligible for two additional terms.

MEDICAL DISTRICT TRUSTEES:

District 2: Edward W. Catalano, M.D., elected 1986. Eligible for two additional terms.

District 2: Frank W. Young, M.D., elected 1986. Eligible for two additional terms.

District 4: James B. Page, M.D., elected 1986. Eligible for two additional terms.

District 4: William J. Goudelock, M.D., elected 1984, re-elected 1986. Eligible for one additional term.

District 6: James M. Lindsey, Jr., M.D., elected 1986. Eligible for two additional terms.

District 6: District eligible for additional Trustee for term of two years, but no more than three consecutive terms.

District 8: John W. Rheney, M.D., appointed in 1984 to fill unexpired term of D. Wayne Whetsell, M.D. Elected 1984, reelected 1986. Eligible for one additional term.

AMA DELEGATES:

(All terms expire 12/31/88)

John C. Hawk, Jr., M.D.

Randolph D. Smoak, Jr., M.D.

AMA ALTERNATE DELEGATES:

(All terms expire 12/31/88)

Charles R. Duncan, Jr., M.D.

Kenneth N. Owens, M.D.

OFFICER REPORTS

THE PRESIDENT

Thank you for the privilege of serving as your president this past year. It has been a successful year for the SCMA, due to the efforts of its members and staff. Boredom would never be a word to describe any leadership position in the SCMA, especially the presidency. Our organization is involved in and responsible for so many activities on behalf of its physician members and the public it serves, that there is never a dull moment. Time does not permit me to address all the issues, but I would like to touch on some of what I feel are important.

Much of my time this year has been spent representing the SCMA in many different areas: Interviews on television, radio and newspapers, ranging from "What is the SCMA?" to "AIDS"; participating in panels on ethics, concerns of the aging and comprehensive health education; appearing at Senate and House committee and subcommittee hearings and meetings; serving as Doctor of the Day; and attending DHEC Task Force Meetings and DHEC Board Meetings, just to mention a few.

I also served on the DHEC Hazardous Waste Task Force, and by the Annual Meeting, final recommendations of the task force should have been made. The SCMA will be called upon to evaluate and act upon these recommendations, especially those concerned with the Lake Marion Landfill.

It is a pleasure traveling this state from mountain to seashore and back (often in the same day), meeting with you at the local level. The SCMA is only as strong as its component societies and the support through leadership and membership they provide. I have been impressed with the commitment and leadership exhibited at the county level. Evidence of the strength you have exists in the quality of trustees you send to our board. I express my gratitude to the counties for their support of the SCMA, its component organizations, committees and members that serve. I also thank you for the delegates sent to the Annual Meeting.

As you know, specialty societies are also represented with delegates here at the Annual Meeting as is true at the AMA level. While each specialty

has interests unique to that specialty, we must never lose sight of the need to remain united in our mission of representing the profession of medicine and the public we serve.

The success of our organization, the SCMA, depends on the efforts of its county and specialty societies. I urge your continued support and leadership. I also challenge you to return to your respective societies and support your membership committees. At no time in the history of medicine has it been more critical for the AMA and SCMA to present a unified front. You don't have to be reminded of the responsibilities we all face in today's world.

The SCMA and SOCPAC are enjoying another record year in membership growth. We should not be satisfied, though, until we have one hundred percent participation. Identify those in your counties who have not become members and ask them to get on board the SCMA train. We do not need and cannot tolerate "free riders."

The Auxiliary to the SCMA continues to be one of our strongest assets. The Auxiliary is very visible across the state and has supported our mission in many ways—community projects and legislative efforts, to mention a few. I do feel, though, the Auxiliary could be a more integral part of our organization, especially on the local level, if given the opportunity. Support the Auxiliary. Your communities need what you and the Auxiliary have to offer. On the statewide level, the Auxiliary has launched their Health Education Van project. I commend that project to you. Every physician should respond positively to the Health Education Van. If you have not already done so, visit the Auxiliary booth today and pledge your support.

The SCMA continues to be most active in two arenas, legislative activities and interfacing with state agencies and boards.

Legislatively, the SCMA has been very successful. Thanks to the efforts of many of you and our legislative advocates, many pieces of legislation of concern to us have been put to rest and several bills initiated by the SCMA have been passed. Time does not permit me to discuss each of the bills. Your attention is called to the report of

OFFICER REPORTS

the Legislative Activities Committee. Your President-Elect, Tommy Rowland, has been in charge of our legislative efforts this year and both he and I have testified and have been very active on your behalf. Be aware of what the SCMA is doing legislatively, participate in the process and share our success with non-members and urge them to become part of the effort. The SCMA has earned the respect of the General Assembly and it is a pleasure to represent you.

By this time, I hope the efforts of the Civil Justice Coalition have been successful in obtaining some measure of tort reform. The SCMA has been very active on your behalf for meaningful tort reform. The future of medicolegal issues in South Carolina, even with tort reform, is unclear. It behooves us as individuals to do all we can to impact the liability situation. I commend to you the Risk Management Program of the SCMA and urge you to do all the things each of you knows you can do to minimize your exposure.

Our organization continues to maintain active liaison with the state agencies. It is essential we do this for two reasons, to represent physicians' interests as they relate to agency policy and to fulfill our responsibility as caretakers of the health concerns of all citizens of South Carolina. Our involvement with the state agencies must continue and broaden in its scope. I have testified on behalf of the SCMA at several board meetings and have been a panel participant on several agency workshops.

The committees of the SCMA continue to put in many hours of valuable work on our behalf. I personally thank all the members of these committees for their willingness to serve.

The CME Committee, chaired by Dr. O'Neill

Barrett, has again provided an outstanding scientific program for us. I am especially pleased by the integration of the Medical Ethics Committee into this Annual Meeting. The Medical Ethics Committee, chaired by Dr. Donald Saunders, has been busy and much of our focus of this meeting is a direct result of their efforts. The scientific sessions are heavily laced with ethics presentations and the House of Delegates will deal with a number of items generated by that committee, especially those policy statements focused on AIDS.

Our delegation to the AMA maintains a presence on the national level. John Hawk, the chairman of our delegation, continues to serve as chairman of the Constitution and Bylaws Committee and Randy Smoak, our Vice-Chairman, continues to serve as Secretary of AMPAC. The delegation represents you at both the Annual Meeting each June in Chicago and the interim meeting in December. Two weeks out of busy schedules are devoted to serving you and the patients of South Carolina on the national level.

Again I thank you for the opportunity given to me to serve the mission of the SCMA, to represent you and the people of South Carolina. It has been a great year for the SCMA and that is due to the combined efforts of the Officers, the Board of Trustees and the staff of the SCMA.

There is much and always will be much to be done. As Dr. Tommy Rowland takes over as President of the SCMA, I pledge my support to him and to the SCMA and put my services at his disposal. I ask each of you to do the same.

Respectfully submitted,
C. R. Duncan, Jr., M.D.,
President

OFFICER REPORTS

THE TREASURER

As I complete my first year as Treasurer of the South Carolina Medical Association, I would like to present a short report about the SCMA's financial condition. A more comprehensive report will be presented to the 1988 House of Delegates in Charleston.

For the year ended June 30, 1987, the SCMA had net revenues over expenses including depreciation of \$38,403. However, if you exclude depreciation expense of \$32,839, the SCMA had net operating revenues over expenses of \$71,242. The SCMA had a Fund Balance of \$1,724,988 as of June 30, 1987.

The SCMA's current financial condition for the seven months ended January 1988 projects a negative financial position. At the end of January, the SCMA had expenses over revenue of \$55,731. We currently project that the SCMA will have net expenses over revenue of \$75,000 for this fiscal year.

The investment policies of the SCMA and its affiliates have continued in a similar manner, as in past years, with diversified investments in federal treasury and agency notes and money market funds. As of June 30, 1987, the SCMA's permanent and operating reserves had balances of \$1,187,680 and \$323,939 respectively. The Board of Trustees,

in their February, 1987 meeting, voted to discontinue the policy of allocating six percent of the budget annually to the permanent reserve. The Board agreed to having total reserves equal one year's operating budget and any excess should be allocated to cover future operational deficits. Therefore, the permanent and operating reserves will remain constant for the year ending June 30, 1988.

For 1989, we have not projected a membership dues increase. This will mean that we have not had an increase since 1977, which to me is an outstanding accomplishment particularly when you consider the increase in the cost of living during this time period. Our society has performed so well financially that we maintain this sound financial position in spite of remaining in the lowest 10 percent of state associations as far as annual dues are concerned. I know of no professional organization that is operating on any more of a sound financial basis. I thank the membership for the privilege of having served as your treasurer for this past year.

Respectfully submitted,
Bartolo Barone, M.D., F.A.C.S.,
Treasurer

THE SPEAKER OF THE HOUSE

The 140th Annual Meeting and Scientific Assembly of the South Carolina Medical Association will be held April 27-May 1, 1988, in the Omni Hotel at Charleston Place. This is the second year our meeting will be held in this charming setting. That should add excitement and enthusiasm to the scientific sessions and social events. O'Neill Barrett, M.D., once again has an outstanding array of academic and clinical talent assembled to update us in various aspects of medicine. Mark Siegler, M.D., will present our second annual Leonard Douglas Memorial Lecture at the Thursday morning House of Delegates. We will be privileged to have Dr. James E. Davis, President-Elect of the American Medical Association, with us for the weekend. In addition to the scientific assemblies, there will be a major focus on ethics this year. Please make your plans to share all this and more

with us in Charleston.

Your Board of Trustees, officers, and staff have worked this year to implement those resolutions and recommendations adopted by the House of Delegates at its 1987 meeting and included in this report. As recommended by this body, a provision for contributions to SCIMER has been included in the annual dues statement, and financial statements of SCIMER, the South Carolina Medical Care Foundation and the Members Insurance Trust are included in reports to this year's House of Delegates. As you have directed, county medical society presidents have been invited to Board of Trustees' meetings on a rotating basis. The problem of toxic waste in our state is finally being addressed through a task force organized by the Department of Health and Environmental Control (DHEC) and on which our President, Dr.

Charles Duncan, sits. I believe that meaningful decisions will be made by this group. As you instructed, your Board of Trustees has urged DHEC to develop a meaningful plan to educate the public and prevent the spread of AIDS in our state. This agency has placed the prevention and public education regarding AIDS at the top of their budget priorities this year. You have asked that SCMA support the establishment of a comprehensive school health education act for S.C. schools and this is currently being debated in our legislature. The 1987 House of Delegates passed a resolution that the SCMA institute the volunteer program of "personal care" to our elderly patients. Our membership has given this an enthusiastic response and our early initiative has rendered unnecessary a bill that was submitted to the House of Representatives in South Carolina this year to mandate Medicare assignment for physicians in this state as a condition of licensure to practice medicine and surgery.

Your staff has also been at work to insure that the House of Delegates functions as a completely representative body for our membership. I was privileged to attend a Speaker's forum in December and as a result we will be having all motions regarding resolutions come from the floor of the House of Delegates rather than from reference committee chairmen as has been done in the past several years. This should allow more spontaneity from delegates and an enhanced opportunity for individual input. In these and other matters, we owe a debt of gratitude to our Executive Vice President, Bill Mahon, and a staff that serves us so well. Day in and day out, through many difficult negotiations, plans and activities, these men and women are guarding our interests and those of our patients. When you see them, don't forget to thank them for what they do for us.

Respectfully submitted,
O. Marion Burton, M.D.,
Speaker of the House

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FIRST MEDICAL DISTRICT

I am completing my third year as a member of the Board of Trustees and my second year on the Executive Committee as the member-at-large from the Board. I have attended all the Board and Executive Committee meetings as well as the Leadership Conference last September. The Board continues to be very active in all areas that impact on South Carolina physicians and their patients.

We are now in our third year of a major tort reform effort and are participating with the South Carolina Civil Justice Coalition for the second year. At this time, we do not know whether our tort reform effort will be successful, but we have made progress in related areas, such as the Charitable Immunity Bill, which should pass this year.

Many of us were surprised to see a mandatory Medicare assignment bill this year; fortunately it has already been defeated. I expect that we will continue to see numerous bills which have a major impact on the practice of medicine. The SCMA staff will continue to monitor closely these legislative activities. Our two new legislative assistants,

Jan Maynard and Marlene Sipes, are doing an excellent job, but the nature of the legislative process requires us to be ever vigilant. New bills regarding chiropractors, physical therapists, insurance forms, disposable wastes, etc. will continue to be introduced each year and will require a major effort from SCMA to ensure that our interests are represented.

However, one of our major problems is that we don't have wider participation in SCMA by the physicians of our state. For many years, about 60% of the physicians have belonged to SCMA, and in the Charleston area, which I represent, the percentage is only about 45%. I am convinced that we cannot significantly improve SCMA membership unless each SCMA member will help in recruitment. We tend to think that everyone who "practices medicine" is a member of the SCMA, but in fact many of the physicians you see and work with each day are not SCMA members. I challenge you to help with recruitment of new members; the time you spend will greatly increase the strength of your organization.

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Some physicians respond that they don't need SCMA or that SCMA doesn't do anything for them. The organization is more active now than ever before, and dues have not increased in the past ten years! In addition to the legislative efforts, which help every physician regardless of SCMA membership, the SCMA is the recognized clearinghouse for information about federal and state regulations, Medicare, the PRO, etc. The "SCMA Newsletter," published in *The Journal* each month, is an excellent resource for physicians about matters of importance to their everyday practice. Other major benefits of SCMA membership include the health and disability insurance program, risk management program and scientific programs for CME. A new Membership Benefits Committee has been established to evaluate new programs to offer the membership.

I suspect most SCMA members do not know what the Board does at its meetings. This year we

have invited the county presidents to attend the Board Meetings, but very few have done so. The Board welcomes the participation of the county presidents and hopes that more will attend next year. In addition, I think the Board should consider including a synopsis of the Board meetings in the "SCMA Newsletter." Many of the important items discussed, such as SCPRO, AIDS policy, toxic wastes, tort reform, etc., do not have simple solutions; I think it is important for the membership to know that the Board is working on these problems.

I appreciate the opportunity to serve as a trustee, and I hope that every SCMA member will consider ways that our organization can serve you and your patients. Please take a moment to make your ideas known to the SCMA staff or members of the Board of Trustees.

Respectfully submitted,
J. Chris Hawk, III, M.D., Trustee

FIRST MEDICAL DISTRICT

It has been an honor for me to serve as your Representative to the Board of Trustees from the First District. At the reorganization meeting of the Board of Trustees in April, I was honored by being elected Chairman of the Board for the second year. I have attended all Board and Executive Committee Meetings this year as well as the Leadership Conference for SCMA, the AMA Interim Meeting and the AMA Annual Meeting. I represented the SCMA at the Trustee, Hospital Administrator and Physicians Annual Meeting at Hilton Head. I have tried to visit all the counties in my district this year. We have been working with Dorchester County to increase its membership locally and in the SCMA. We have met with Beaufort County on several occasions to help them reorganize their society. There was some discussion about separating Beaufort and Hilton Head into two medical societies. At the present time, however, they intend to remain as one county medical society.

As I am running for President-Elect, I will not be eligible for the position of Trustee for another term. I have informed the counties of this district

so a new Trustee may be elected. It has been a pleasure for me to serve as your representative to the Board.

Respectfully submitted,
Daniel W. Brake, M.D., Trustee

SECOND MEDICAL DISTRICT

This past year of serving as the trustee from the Second District has been interesting, informative, and time-consuming. The SCMA continues as a representative organization with active discussion of many topics at the board level. On occasion, items of major importance have been decided by as little as one vote.

Although progress on the tort reform initiative has been disappointing, the SCMA has proven to be an effective organization in other legislative efforts affecting medicine. I have participated in an increased number of fundraisers for various politicians over the past year. This approach has been both costly and time-consuming, but, I be-

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lieve, most necessary if we are going to establish meaningful relationships with our representatives. Drs. Warren Holland and Frank Warder implemented a series of early morning breakfast meetings involving members of the Columbia Medical Society and our elected representatives. This has proven to be both a worthwhile and productive approach in establishing better lines of communication.

I have served with Barbara Whittaker for the past year as a member of the South Carolina Hospital Association PRO Task Force. We have attempted to function as advocates for patients and physicians around the state in as nonadversarial fashion as possible.

Due to the geographic proximity of Atlanta, I attended my first American Medical Association Meeting this year in the Georgia capital. I was greatly impressed by the amount of hard work and long hours involved in the meeting. I am not sure that I would have the dedication required to meet all of the delegate responsibilities at these meetings on a regular basis.

It has been a privilege representing my colleagues over the past year on the SCMA Board of Trustees. I have endeavored to perform this task in an acceptable fashion, and I have appreciated this opportunity to serve both my local and state societies.

Respectfully submitted,
E. W. Catalano, M.D., Trustee

SECOND MEDICAL DISTRICT

This past year has been an educational and rewarding experience while serving as your Second District trustee. It has also been an honor, and I thank you, the SCMA members, for allowing me to serve with the medical leaders of this state.

In addition to attendance at regular Board meetings, I have attended the meetings of the Legislative Committee as the Board liaison to this important committee. This is the committee that recommends to the Board of Trustees our support or opposition to various bills introduced before the State Legislature.

This past year I have also served as treasurer of SOCPAC and I have been reappointed as a member of the Candidate Review Committee. This very important committee recommends to the SOCPAC Board those candidates we will support

for election or reelection. To represent you, I attended the Board Retreat in Asheville in October. There we had ample time to discuss important problems facing the SCMA. These issues, of course, included our efforts on tort reform, health education, the AIDS dilemma and the numerous problems associated with the PRO.

The annual SCMA Leadership Conference was very helpful as usual, and Dr. Edward Annis was the most engaging and informative speaker I've heard on the topic of "Medicine Today." I would encourage all hospital chiefs of staff and county medical society presidents to attend this year's session.

Three major political battles continue to face us. Tort reform is now being fought with the outcome still very much in doubt. Mandated assignment for Medicare is dead for now but will be back again and again. We need to consider a voluntary program to blunt this challenge. The third major problem is the DRG System of Payment and the unreasonable and capricious PRO enforcement. DRGs and PRO appear to be intent upon closing many small rural hospitals, a situation which if allowed to happen, will bring untold misery to large areas of this state.

I encourage you to become more politically involved, to join SOCPAC, and to ask your colleagues to join us in making SCMA even stronger.

Respectfully submitted,
Frank W. Young, M.D., Trustee

THIRD MEDICAL DISTRICT

Third District Trustee has attended all meetings of the Board of Trustees at least up until the time this report is being written. The Fall retreat was an especially interesting meeting. A delegation from the AMA gave an afternoon workshop on communications with TV, radio and newspaper reporters. The instructors gave us advice as to how one should work with these reporters to get our message across.

HMO activity seems to be on the wane in this particular district. Patient's Choice is now nonexistent. Companion HMO appears to be less active in our area, also. Our doctors are continuing to support tort reform. I want to express my appreciation to all members of the Third District and offer my services to any doctor or group of doctors in this area that might be in need of assistance.

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I look forward to another year of service and appreciate the support given me by the members in my district.

Respectfully submitted,
Richard M. Carter, M.D., Trustee

FOURTH MEDICAL DISTRICT

During the year 1987-88 as your trustee, I participated in Board meetings, attended the Annual Retreat in October and enjoyed fellowship with the Anderson and Oconee Medical Societies. I also served as liaison to the Mediation Committee and the Legislative Committee and participated in the Doctor of the Day program. Throughout the year, on occasion, members of the State House and Senate were contacted on several issues relating to medicine. In all, the year was a busy and fruitful one.

Respectfully submitted,
William D. Goudelock, M.D., Trustee

FIFTH MEDICAL DISTRICT

As I look back at last year's report, I cannot help but think how some things change so dramatically in one year and some things never seem to change. For the last two years, I have addressed in my report the issue of tort reform. As you may recall, two years ago, we, as a medical association, single-handedly lobbied for changes in the tort system. After being unsuccessful last year, we joined with the S. C. Civil Justice Coalition to present a united front in lobbying for tort reform. A very weak bill was passed in the House, but nothing was ever reported out of committee in the Senate. This being the second year of our two-year legislative session, the same bill has been discussed and just recently reported out of the Senate subcommittee. As of this writing, we still have a long way to go before any meaningful tort reform bill is signed into law, but hopefully we will have more news by the time of the Annual Meeting.

Last year I spent a great deal of time talking about the CHAMPUS initiative. It became such a complex issue that the Board of Trustees decided that we could no longer pursue it.

Another issue that seems to keep surfacing is the

frustration regarding peer review and, more specifically, the South Carolina PRO. We continue to hear many complaints and monitor the PRO's activities. I would like to encourage fellow physicians to send documentation of their complaints to the SCMA office.

On a more positive note, I would like to comment on the AMA Interim Meeting in Atlanta in December. With the meeting being so close to South Carolina, many of the members of the Board of Trustees attended. For many, including myself, it was our first AMA meeting, and I came away being much more impressed and enthusiastic about the goals and thrusts of the AMA than I previously had been. I urge all physicians to be members of the AMA and attend an annual meeting.

Our local York County Medical Society was honored to have our President, Charlie Duncan, and Executive Vice-President, Bill Mahon, attend our February meeting. It is always a pleasure to have leaders such as these two fine men talk to local groups.

In closing, I would like to take this opportunity to thank the physicians of this district for allowing me to serve as their trustee. I sincerely hope that if I can be of any assistance to any of you that you will not hesitate to contact me. It is gratifying to meet and work with the excellent leaders and representatives of organized medicine in South Carolina. I feel honored to be a member of this representative group.

Respectfully submitted,
Terry Dodge, M.D., Trustee

SIXTH MEDICAL DISTRICT

This completes my second year of my first term as a Board of Trustee member, and I must say that it continues to be a very educational experience. I have been privileged this year to serve again as the alternate delegate to the Young Physicians section and have attended the AMA meetings in Chicago and Atlanta this year. Both of these were very eye-opening, and I would encourage anyone who has never been to an AMA meeting to make every effort to attend one in the near future.

This year I was also appointed to the Board of

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Directors for SCIMER and was appointed from that Board to serve on the Health Education Van Committee. This is a project which is being spearheaded by the SCMA Auxiliary and is a very exciting project indeed. I'm in hopes that we will have some displays available at the Annual Meeting for all of our members to see, and I would encourage your support, both philosophically and financially, for this very important project.

This year the Board has again had many legislative issues on our agenda. I am pleased to report that, due mainly to the efforts of our lobbyists and Bill Mahon, we have had very good results. The tort reform bill continues to be our major legislative initiative, and hopefully we will get some

meaningful tort reform this year.

The Sixth District has now met the criteria according to the SCMA Constitution and Bylaws to be awarded a second Board of Trustee member. At the Annual Meeting this year we will elect our second Board of Trustee member to serve the usual two-year term. It has been a pleasure for me to serve as the trustee from the Sixth District. If I can be of any assistance to any of my constituents or any members of the SCMA, I will be glad to do so.

Respectfully submitted,
J. M. Lindsey, M.D., Trustee

EIGHTH MEDICAL DISTRICT

This has proved a most interesting and extremely busy year. I have attended all Board of Trustee and all Executive Committee meetings with one exception. In addition, I have attended all board meetings of the SCMA Members' Insurance Trust, all of the Perinatal and Maternal Health Committee meetings and two AIDS Task Force meetings held since my appointment to this body—this in addition to my duties as President of the S. C. Chapter of the American Academy of Pediatrics.

My home medical society has held regular meetings, the last two of this year being probably the most important. In January, the President of the SCMA addressed a meeting to which all of the Eighth District members had been invited. In February, Dr. Edward Annis, former President of the AMA, spoke at a meeting to which all members of the Eighth District, all members of the Board of Trustees and many members of the local Bar Association, including the legislative delegates and other regional political figures, were invited.

In addition to the above meetings, I represented the Eighth District at all board meetings and all

House of Delegate sessions at the Annual Meeting in Charleston in April of last year. Too, I attended the AMA Leadership Conference in Chicago in February.

In my opinion, while tort reform remains the single most vital concern of all physicians, decreasing the harassment of S. C. physicians by the S. C. PRO, passing a satisfactory vaccine bill, and convincing non-member physicians that it is to their interest to join the SCMA are matters of great importance—because truly there is no free lunch and there is no free ride.

At the Annual Meeting in April of this year, I will have completed my second two-year term as the Eighth District representative on the SCMA Board of Trustees. My home society (Edisto) has honored me by nominating me for a third two-year term. Should the delegates of the Eighth District and the remainder of the House of Delegates concur in this decision, I would be most pleased to serve another term.

Respectfully submitted,
John W. Rheney, Jr., M.D., Trustee



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COMMITTEE REPORTS

ADVISORY COMMITTEE TO THE SOUTH CAROLINA DEPARTMENT OF VOCATIONAL REHABILITATION

The South Carolina Medical Association Advisory Committee to the S. C. Department of Vocational Rehabilitation met on Wednesday, February 24, 1988, at the Vocational Rehabilitation Complex, West Columbia, South Carolina. Dr. Ben N. Miller, Chairman, presided. Members of the committee present were: Dr. Frank Axson, Seneca; Dr. James R. Buehler, Anderson; Dr. Malcolm U. Dantzler, Columbia, representing DHEC; Dr. Edward Kimbrough, Columbia; Dr. Robert C. Lindemann, Rock Hill; Dr. Woodrow W. Long, Jr., Greenville; Dr. Braxton B. Wanamaker, Charleston; and Ms. Barbara Whittaker, Columbia, representing the South Carolina Medical Association.

Vocational Rehabilitation was represented by Mr. Joe S. Dusenbury, Commissioner; Mr. Preston Coleman, Assistant Commissioner, Administrative Services; Mr. Walter J. House, Client Services Consultant; Mr. Charles P. LaRosa, Assistant to the Commissioner; Mr. David Lever, Client Services Supervisor; Mr. Edward McMillion, Director, Staff Development and Training; Mr. Richard A. Vandiver, Director, Disability Determination Division; Dr. James H. Weston, Physician, Disability Determination Division; Mr. Gregory W. McGrew, Engineering Associate and Mr. James L. Washam, Project Administrator.

Dr. Ben N. Miller welcomed the members of the Advisory Committee and said it was a privilege to greet them. He stated that the committee served two organizations, the South Carolina Medical Association and South Carolina Department of Vocational Rehabilitation. Dr. Miller indicated that it was a special privilege to have them in our "own home."

Mr. Joe Dusenbury, Commissioner, was presented and reviewed with the members a master plan of the complex. He stated his pleasure in that the completion of the complex had occurred in a shorter time period than expected. When the property was first purchased, the first goal was to build the Comprehensive Center in order to assist people who had passed the crisis of their dis-

ability. There are plans to expand the facility in the near future. Architects have already begun making plans to expand the dining area and add additional beds. It was noted that because of Vocational Rehabilitation's close working partnership with business and industry, they helped with building the state office. The state office was built for less than \$50 a square foot. Vocational Rehabilitation does a great deal of contract work with about 350 industries, earning approximately six million dollars.

Mr. Dusenbury pointed out that the model home for the handicapped had received national recognition and in the very near future there will be people from Nevada and Canada looking at the home.

A program for computer training was started and it was made clear from the start that if the students were successful, further plans for additional classes would be provided. Because of the success, two new classes started in a new training facility in August.

It was noted that legislation requires that a Rehabilitation Engineer be on the staff and this has been done.

Mr. Dusenbury indicated that Vocational Rehabilitation had a client that finished law school and worked about three months, but as a result of not having the ability to exercise and stay healthy in order to overcome other diseases, the client expired. At this point it was determined that a program was needed to assist with the building of clients' muscles and physical stamina. A grant was obtained to assist with this. Vocational Rehabilitation is working with orthopaedists, University of South Carolina and Clemson University to educate the people of South Carolina regarding the handicapped.

Mr. Davis Lever, Client Services Supervisor, was introduced and provided an indepth description of the programs available in the complex. He stated that the Comprehensive Center started as a vocational center for severely handicapped offering vocational evaluation, occupational therapy

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and physical therapy. Clients have been referred from all across the state. Evaluation at the facility is approximately four weeks long. During the evaluation, a comprehensive work-up is done and recommendations are made to the field counselor. At the end of the evaluation, clients are referred back to the counselor for assistance with job placement. The Muscular Development Center is to receive its first clients on February 29. This center will provide recreation therapy and aquatics. A physical therapist and a nurse, who is skilled in aquatics, have been hired. Also, there are plans for the chronic pain clients who are working and will need continued therapy.

Mr. James Washam, Project Administrator, was introduced. He stated that to date 28 clients have graduated from computer training and that 27 are successfully employed in South Carolina. One has moved to Florida and hopefully he will soon be employed. It was stated that Office Occupations is offered and one client has already reached the speed of fifty words a minute on the word processor and is ready for employment. Mr. Washam said that normally the training period was six to nine months, but if it required additional time, then training would continue. It is expressed to each client that success on the job is what is wanted for each and for them to be a winner, becoming independent, tax paying citizens.

At this point a tour of the facilities was begun with a time of discussion and questions. The discussion was continued over dinner. The discussion indicated that the committee was well pleased with the efforts of the Agency in rehabilitating the handicapped citizens of South Carolina. The committee did not make any particular motion or propose any action.

There being no further discussion, or business, the meeting was adjourned.

Respectfully submitted,
Ben N. Miller, M.D., Chairman

AGING AND MEDICARE COMMITTEE

This committee was re-activated and renamed to include "Medicare" in 1987 due to physicians' increasing concerns with changes in the Medicare program.

We met once in November and invited Ms. Keller Barron, Research Director of the Joint Legislative Committee on Aging, and Ms. Ruth Seigler, Executive Director of the S. C. Commission on Aging.

I updated the committee and our guests on the SCMA's Personal Care program which was initiated as a result of a resolution from the S. C. Internal Medicine Society at last year's Annual Meeting. This program has now enrolled over 800 S. C. physicians who are nonparticipating in Medicare but who agree in writing to accept assignment for those patients in need and also agree for their office staffs to assist all Medicare beneficiaries in completing their claims if this assistance is requested. After enrolling, physicians receive brochures for their offices which help explain and promote the program.

Of special concern to our committee this year was a proposed bill in the S. C. House of Representatives which would mandate our acceptance of Medicare assignment in order to be licensed. As a result of SCMA input, this bill has been tabled but it behooves us all to assure our Medicare patients of our willingness to provide assistance when needed as promoted in the Personal Care program.

At our committee meeting, we distributed a copy of the AMA's proposed alternative approach to financing Medicare. This program entitled "Protecting the Elderly" has many meritorious ideas, and we should hope the AMA can persuade members of Congress of the benefits of this type of program.

We were pleased to receive a packet of materials from Ms. Seigler including an Action Plan for the Elderly. We were also fortunate to receive an update on pending legislative issues in S. C. from Ms. Barron. Such pending or possible legislation included amendments to the living will statutes, a state health IRA, standards for long term care insurance, and possible redirecting of funds from a one million dollar proviso for new nursing home beds to community-based services.

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It will remain important to maintain such dialogue between S. C. physicians and others working to aid our elderly population. It will also continue to be important for the SMCA to serve as a resource to S. C. physicians in answering the many questions regarding MAAC's, PRO, Medicare payment problems and other issues.

Respectfully submitted,
Walter J. Roberts, M.D., Chairman

ALCOHOL, DRUG ABUSE AND IMPAIRED PHYSICIANS COMMITTEE

The Alcohol, Drug Abuse and Impaired Physicians Committee continues to make itself available to aid South Carolina physicians who are impaired from use of alcohol or drugs or who have other problems that interfere with their delivery of quality health care to their patients.

This year, the chairman met with the South Carolina State Board of Medical Examiners and the Board of Trustees in order to keep these bodies informed of the committee's work and to improve cooperation in the rendering of help to the impaired physicians and, thereby, help insure protection of the health consumer of the state.

The chairman and several other committee members attended the AMA Impaired Professionals Conference in Chicago and brought back to the committee a number of strategies and updated techniques for the furthering of efforts in South Carolina. A number of valuable contacts with representatives of other states were made which will be invaluable in improving the quality of work of the committee. Some of these contacts have already resulted in local improvements.

Several members of the committee attended the South Carolina School of Alcohol and Drug Studies conducted at Winthrop College in July 1987.

The committee, with approval of the SCMA Board of Trustees, formed a Health Care Professionals Subcommittee. This subcommittee consists of nurses, dentists and veterinarians. The purpose of the committee is to aid other professional groups in establishing programs of their own and to help coordinate any joint activities between the various professional organizations. There are no current plans to include other health professionals

in the work of the Impaired Physicians program of the SCMA.

The committee was asked by the MIT (Members' Insurance Trust) to offer standards to be used by the Trust in making payments to and/or referrals of insured professionals for treatment by various facilities. The committee has submitted some standards used by the committee in making referrals to treatment facilities. A subcommittee is currently at work on revising and updating the standards which will be subsequently discussed and adopted by the committee as a whole.

Contact has been made with the Auxiliary for the purpose of setting up a support group for spouses and other members of impaired physicians' families. A pilot committee has been established which is in the process of studying ways to implement this needed service.

The chairman met with the SCMA Board of Trustees to present a proposed budget for the committee. The budget was approved and the committee has hired a part-time lab professional who will personally collect specimens from physicians under contract to the committee (for drug/alcohol screens).

The committee members are striving to be more visible to those of our physician colleagues who are in need of our services and are actively seeking and implementing ways to promote the committee's work as an advocate to the troubled physician and his/her family. Ways and means for promotion of the committee, in place and proposed, are advertisements and feature articles in *The Journal of the South Carolina Medical Association*, perhaps a booth at the SCMA Annual Meeting, speaking engagements at local levels by committee members and widely disseminated promotional materials.

I wish to thank the committee members and the SCMA staff for their work and support this past year.

Respectfully submitted,
Hugh V. Coleman, M.D., Chairman

CONSTITUTION AND BYLAWS COMMITTEE

Your Constitution and Bylaws Committee has addressed a number of issues this past year, and we are pleased to present them to the House of

COMMITTEE REPORTS

Delegates for your consideration.

As reported to the House last year, the Committee has been working on establishing criteria for specialty society representation. We recommend that Section 1.32 COMPONENT SPECIALTY SOCIETIES be deleted and replaced with the following section:

1.32 COMPONENT SPECIALTY SOCIETIES. Any specialty medical group which is organized, has elected officers, or is recognized by the American Medical Association may, upon recommendation of the Board of Trustees, be considered by the House of Delegates for acceptance as a component specialty society.

1.321 CRITERIA FOR APPROVAL. The Board of Trustees shall review each application and determine whether the applicant society meets the CRITERIA FOR REPRESENTATION approved by the House of Delegates, and shall report its findings and recommendations to the House of Delegates.

1.322 PURPOSES AND DUTIES. Duties of the specialty societies include areas of continuing medical education, workshops, and committee responsibilities as designated. Each specialty society shall submit to the Board of Trustees every two years certification and documentation that it continues to meet the CRITERIA FOR REPRESENTATION as a Component Specialty Society.

1.323 REPRESENTATION IN THE HOUSE OF DELEGATES. One (1) qualified delegate elected by each of the component specialty societies recognized by the Association will have power to vote in the House of Delegates.

The CRITERIA FOR REPRESENTATION to be used in the evaluation of prospective component specialty societies shall be as follows:

1. The Society must abide by the Constitution and Bylaws of the South Carolina Medical Association.

2. The Society must represent a field of medicine that has recognized scientific validity, or must serve physicians in some capacity related to their professional activities.

3. The Society must represent a perspective on the practice of medicine and an area of expertise that would contribute to the policy making pro-

cesses of the House of Delegates of the SCMA.

4. A substantial proportion of the physicians practicing within that field of medicine in the State of South Carolina must be members of the Society.

5. The Society must have a voluntary membership and must report as members only those physicians who are current in payment of dues and have full voting privileges, including eligibility for office.

6. The Society must be active within its field of medicine and must hold at least one business meeting of its members each year.

7. The Society must meet one of the following criteria:

- a. Be recognized by the American Medical Association as a specialty society eligible for membership in the AMA, or

- b. Be statewide in scope, with statewide eligibility for membership and with members in at least 10 counties, including each major area of the State.

8. The Society must be established and stable; therefore, it must have been in existence for at least 5 years prior to submitting its application.

9. The percentage of physician members of the Society, who are members of the SCMA, must be at least equal to the percentage of the total number of licensed physicians in South Carolina who were members of the SCMA as of December 31 of the previous year.

10. The Society must submit a resolution or other official statement to show that the request is approved by the governing body of the organization. It shall also submit its Constitution and/or Bylaws which shall not conflict with the Constitution and Bylaws of the SCMA.

The Board of Trustees examined the ever growing number of Honorary Members and the fiscal impact on the Association. As a result of this study the following revision is recommended:

1.422 DUES AND ASSESSMENTS. Honorary members shall be exempt from the payment of dues *if they have been a member of the Association for over forty (40) years or they have been a member of the Association for over twenty-five (25) years, are retired from practice and are age seventy (70) or over. Honorary members with over twenty-five (25) years of membership in the Association, who are retired and under the age of*

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seventy (70) shall pay one half (½) the regular dues.

The SCMA has an active Ethics Committee and they are reviewing all recommendations from the AMA. This process raises the possibility of a difference of opinion between the SCMA and the AMA, and we offer the following amendments to resolve that problem:

1.50 PRINCIPLES OF MEDICAL ETHICS.

The Principles of Medical Ethics of the American Medical Association, *as adopted by the SCMA*, shall govern the conduct of the members in relation to each other and to the public.

Last year this House approved the establishment of a Young Physicians Section of the SCMA. The Bylaws to govern this section are presented for your approval:

1.00 YOUNG PHYSICIANS SECTION.

There shall be a special section for young physicians under age 40 or in practice less than five years following completion of formal residency and fellowship training.

1.01 *PURPOSE.* The purpose of this section is to provide a means for young physicians to address and subsequently refer common problems, issues and/or interests to the SCMA Board and House of Delegates.

1.02 *MEMBERSHIP.* Membership in the section shall be limited to SCMA members who are under forty years of age or within their first five years of professional practice after completing a residency or fellowship.

1.03 *GOVERNING COUNCIL.* There shall be a Governing Council of the Young Physicians to direct the programs and activities of the Section.

1.031 *MEMBERS.* There shall be seven (7) voting members of the Governing Council consisting of a Chairman, Chairman-Elect, Secretary-Treasurer, one AMA/SCMA delegate, one AMA/SCMA alternate delegate, and two (2) at large members. Governing Council members shall be elected by majority from the floor at the annual meeting.

1.032 *OFFICERS.* The officers of the Section will have the following du-

ties and responsibilities.

1.0321 *Chairman:* The Chairman will preside at the business meetings and meetings of the Governing Council.

1.0332 *Chairman-Elect:* The Chairman-Elect shall assist the Chairman and preside in the absence of the Chairman.

1.0323 *Secretary-Treasurer:* The Secretary-Treasurer shall maintain such records as may be necessary or advisable for the conduct of the activities of this section.

1.0324 *One Delegate and Alternate Delegate to the SCMA/AMA Young Physicians Section:* The SCMA/AMA Delegate and Alternate Delegate shall represent the members of the Section in the AMA Young Physicians Section. The Delegate and Alternate Delegate shall also represent the Young Physicians Section in the House of Delegates of the SCMA. The Delegate/Alternate delegate must be members of both the AMA and SCMA.

1.0325 *Two (2) At Large Members:* The Members At Large will participate in all deliberations of the Governing Council and will perform other duties as directed by the Governing Council.

1.033 *Term.* Governing Council members, including Delegates and Alternate Delegates, shall serve a term of one year beginning at the conclusion of the annual meeting at which they are elected and ending at the conclusion of the next annual meeting. Tenure for each office shall not exceed two (2) consecutive terms.

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- 1.034 *Vacancies*. Any vacancy occurring on the Governing Council will be filled at the next business meeting of the Section.
- 1.035 *Meetings*. The Governing Council shall meet at least twice yearly under the direction of the Chairman, and the Section shall meet as a whole at least once a year to be called at the discretion of the Governing Council.
- 1.04 *SECTION MEETINGS*. There shall be an annual section meeting of the members of the Section held at the call of the Chairman.
- 1.041 *Voting Membership*. The voting membership shall consist of all physician members of the SCMA who qualify for membership in the Section.
- 1.042 *PURPOSE*. The purpose of the business meetings of the Section shall be:
- (a) to hear such reports as may be appropriate;
 - (b) to consider and vote upon such matters as may properly come before the meeting;
 - (c) to elect, at the annual business meeting, the members of the Governing Council; and
 - (d) to conduct such other business as may properly come before the meeting.
- 1.043 *Quorum*. A majority of the voting members present at any meeting of the Section shall constitute a quorum.
- 1.044 *Relations with County Medical Societies*. County Medical Societies will be encouraged to select one or more young physicians who meet the membership requirements of the Section to attend the Section Meeting.
- 1.045 *Reference Committee*. The Governing Council, at its discretion shall have the authority to form reference committees to receive testimony on business before the meeting, to report to the floor on the content of the testimony and to introduce recommendations to the floor of the Section Meeting.
- 1.046 *Rules of Order*. The rules of order for conduct of business shall be the rules of order of the House of Delegates of the SCMA.
- 1.0461 *Voting and Voice*. Any member of the Section may attend, introduce resolutions or reports, debate issues, and vote in the business meeting of the Section. Any member of the SCMA may be permitted voice in the Section at the discretion of the Chairman.
- 1.0462. *Notice*. Notice of the meeting to be held shall be provided to the membership of the Section at least thirty (30) days prior to the meeting.
- 1.047 *FINANCIAL RESPONSIBILITY*. Any necessary funding of the Young Physician Section shall be the responsibility of the SCMA with SCMA Board approval.
- 1.048 *AMENDMENTS*. These bylaws may be amended during any business meeting of the Section by a majority vote.

Respectfully submitted,
J. Capers Hiott, M.D., Chairman

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CONTINUING MEDICAL EDUCATION COMMITTEE

Following is a status report of CME activities since our report to the House of Delegates last year, particularly with regard to accreditation of other institutions, and the SCMA efforts to regain full accreditation status from the ACCME.

Our entire CME Accreditation Program has been reorganized to conform with the "Essentials" and Guidelines of the Accreditation Council on Continuing Medical Education. The SCMA Staff Coordinator has visited with CME staff at USCSM and the Georgia Medical Association, and she and I attended the October, 1987 meeting of the ACCME in Chicago.

A site survey team workshop was held last fall for our committee members, and George Oetting, Ed.D., Continuing Medical Education Director of the Medical Association of the State of Alabama, helped to educate our members on the ACCME "Essentials" and on how to conduct accreditation site surveys.

Since that time, completed applications for re-accreditation have been received and site visits conducted at Richland Memorial Hospital, the Greenville Hospital System, the Columbia Medical Society and Anderson Memorial Hospital. Richland and Greenville have received full re-accreditation for six years, with annual reports each year; and Columbia Medical Society was approved for a two-year period, with an interim report. The visit to Anderson was on 2/25/88 and the survey team is recommending a four-year accreditation period for this institution. The Committee will act on this recommendation at its meeting on March 18.

Applications are still pending for reaccredita-

tion of McLeod Regional Medical Center and Spartanburg General Hospital, but we anticipate these reaccreditations will have been accomplished by the time of the Annual Meeting.

Letters have been sent to all hospitals in the state encouraging them to seek accreditation of their CME activities for AMA PRA credit.

Thus far, the following hospitals have either inquired and/or are actively pursuing applying for accreditation: Baptist Medical Center, Bruce Hospital, Conway Hospital, Georgetown Memorial Hospital; HSA Coastal Carolina, Moncrief Army Hospital, St. Francis Community Hospital, Roper Hospital, Tuomey Hospital, and Grand Strand Hospital.

The ACCME will conduct a site survey of the SCMA in mid-July for the purpose of assessing our CME Accreditation Program. We are confident that our probationary status will be revoked and full reaccreditation will be awarded.

In the meantime, we have been advised by ACCME staff that it would be prudent to have the SCMA Annual Meeting Scientific Sessions jointly sponsored by the state's two medical schools which have full accreditation status. We feel this will enhance our application to the ACCME and have actively pursued this joint sponsorship.

We feel we have taken giant steps forward in the past year and can continue now to grow in knowledge and expertise in helping to ensure that quality continuing medical education is maintained in South Carolina.

Respectfully submitted,
O'Neill Barrett, Jr., M.D., Chairman

LEGISLATIVE ACTIVITIES COMMITTEE

Mr. Speaker, members of the House of Delegates, SCMA members and guests, it is my privilege to report to you on the activity of the Legislative Activities Committee this past year.

The committee's primary function is to review proposed legislation and recommend a position to the Board of Trustees of the Association. Prior to the opening of the current legislative session, the Committee met and considered numerous issues such as amendments to the Charitable Immunity Act we passed last year, access to medical records, surrogate parenting and mandatory assignments, all of which were up for discussion in the legislature.

The committee also recommended the initiation of some legislation to address problems identified by the membership. A bill has been drafted and introduced to provide limitations on compensation for vaccine-related injuries. Discussion of an SCMA position on physician dispensing of drugs has resulted in the Board adopting a position that physicians should be able to dispense drugs when it is in the best interest of the patient and within the ethical guidelines published by the AMA.

As directed by the House of Delegates last year, staff has drafted and introduced a bill which would address the problem of the numerous utilization review programs physicians must deal with daily. The bill would require that any review which could result in the denial of benefits or payments would have to be done by a physician licensed and practicing in South Carolina or who had been licensed for at least five years in the state.

At our October meeting, the committee reviewed a proposed bill to correct the Charitable Immunity Act which was passed last year. After committee approval, the bill was introduced and has passed the House and is up for favorable action by the Senate. It is expected the bill will be law by the time of the Annual Meeting.

After reviewing a bill that was introduced which would require accepting assignment for Medicare as a condition of licensure, the committee voted to oppose this bill at the highest level and the bill was killed by a 9-2 vote in the House 3M Committee. The physical therapy bill was killed

on the House side very early in the session. The Senate version has been dormant and thus no action has been taken.

The SCMA staff has been expanded in the area of legislative affairs and we now have two fulltime people working at the State House in addition to the time our Executive Vice President spends there. The new legislative assistants are Jan Maynard and Marlene Sipes. Our Doctor of the Day program continues to provide a valuable service to the legislature while they are in session and the committee is grateful to those of you who donate your time to serve.

On behalf of the committee and myself, I would like to thank you for the opportunity of serving on this very important committee.

Respectfully submitted,
H. Cooper Black, M.D., Chairman

MEDIATION COMMITTEE

The Mediation Committee of the South Carolina Medical Association has met once in the past twelve months. The committee met to review several complaints and one which was pending. The committee considered this complaint handled appropriately and closed the file.

Twelve complaints came to the Mediation Committee from April 1987 to April 1988. Of this number, one was referred to the South Carolina Workman's Compensation Commission; five are pending at the local society level; four were non-SCMA members and two were resolved at the local level. This number is considerably lower than last year's figure of twenty-six. The committee believes this is due, in part, to the very efficient and active Grievance Committees of the component medical societies, who are capably handling complaints that come under their jurisdiction.

Respectfully submitted,
Albert G. LeRoy, Jr., M.D., Chairman

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MEDICAL ETHICS COMMITTEE

The SCMA Medical Ethics Committee was created in fall of 1987.

One of our first activities was to propose a committee charge for SCMA Board of Trustees' review and approval. As finalized, our charge is to assist the officers and membership of the SCMA by developing policy positions which define and promote the ethical principles that guide the professional activities of physicians in the context of the present.

The activities on behalf of this purpose are as follows:

1. Review and evaluate the AMA's "Principles of Medical Ethics" and Council on Ethical and Judicial Affairs "Current Opinions." Where disagreement exists, the committee will recommend alternate opinions to the SCMA Board of Trustees, House of Delegates and membership.
2. Through continuing education, enhance knowledge and understanding of the currently important ethical issues.
3. Inform the SCMA membership of new "opinions" by the AMA Council on Ethical and Judicial Affairs with additional recommendations for local applicability where indicated.
4. At the request of the SCMA, review, analyze and comment on resolutions of the AMA House of Delegates and/or the SCMA House of Delegates which involve ethical conduct of physicians.
5. At the discretion of the committee, develop opinions about physician conduct which involve moral principles and practice, values and duties.

The committee has been extremely active with all-day meetings nearly every month. As a reflection of the interest in medical ethics, we have arranged to have medical ethics a theme of this year's annual meeting with Mark Siegler, M.D., presenting the Leonard Douglas Memorial Lecture and with several workshops on ethics throughout the week.

The committee has also prepared and submitted a paper on "The Physician and the Living Will" for publication in *The Journal of the South Carolina Medical Association*. Ethical analysis

and opinions are being developed on In-Office Physician Drug Dispensing and AIDS. In addition, the committee is developing an SCMA Principle of Medical Ethics.

Respectfully submitted,
Donald Saunders, M.D., Chairman

MEMORIAL COMMITTEE

According to our tradition, this is the time that the proceedings of the South Carolina Medical Association pause to pay honor to our fellow physicians who have died since the Association last assembled.

The practice of medicine is one of the oldest and highest callings. It emulates that of the Great Physician in that He both taught and healed and that is the purpose of our profession.

I submit that these doctors, by their skill in the practice of medicine, by their devotion to duty, and by their concern for the human relationships involved, have earned an honored place in the hearts of their patients, their families and friends among the members of this Association.

I ask you to stand while their names are read and afterward for a few moments of silent prayer in their honor: Marshall J. Coleman, M.D., Darlington; Thomas Parker, M.D., Greenville; Gustave Patrick Richards, M.D., Charleston; Hans J. Heller, M.D., Charleston; Julian E. Jacobs, M.D., Myrtle Beach; E. Gordon Able, M.D., Newberry; Cortland D. Leigh, M.D., Great Falls; J. Gordon Seastrunk, M.D., Columbia; Newton G. Quantz, M.D., Rock Hill; Robert Waller Gibbes, M.D., Columbia; Howard Snyder, M.D., Summerville; Homer M. Eargle, M.D., Orangeburg; Francis H. Gay, M.D., Columbia; Harold Starkey Pettit, M.D., Charleston; James H. Blair, Jr., M.D., Columbia; Anne Duell Morgan, M.D., Charleston; Guy A. Calvert, M.D., Lexington; Joseph M. Brice, Jr., M.D., Rock Hill; James R. Howell, M.D., Aiken; Vernon L. Bauer, M.D., Hemingway; A. Richard Johnston, M.D., St. George; Peter Hairston, M.D., Charleston; James R. Howell, M.D., Aiken.

Respectfully submitted,
Woodward Rion Dixon, M.D., Chairman

COMMITTEE REPORTS

OCCUPATIONAL MEDICINE COMMITTEE

The SCMA Committee on Occupational Medicine held quarterly meetings during 1987. *The Schedule of Fees for Physicians and Surgeons for Services Rendered under the South Carolina Workers' Compensation Law* was not revised and reprinted during the year, but many deletions and additions were evaluated to conform with changes in the *1987 CPT Manual*. Many hours were contributed to this effort by all members of the committee.

Physicians' fees which seemed inappropriate to the Medical Department of the Industrial Commission were reviewed at each meeting, and recommendations were made to the commission on an individual case basis.

The committee hosted a dinner meeting with the commission during the year. As usual, this meeting prompted very frank and very productive discussions of our mutual problems and concerns relating to providing the best possible medical care for South Carolina's injured workers at the lowest possible cost.

Members of the committee participated in the planning and presentation of two educational seminars sponsored by the commission during the year. Both seminars were well attended and very worthwhile.

It was also noted by the committee that there has been no change in the conversion factor of the fee schedule for over two years. The committee is currently working with the commission to develop a better mechanism by which to update the conversion factor on a timely basis.

In summary, 1987 was another busy year for the committee in fulfilling its role as liaison between the South Carolina Medical Association and the South Carolina Workers' Compensation Commission, as well as a resource group to the commission as it attempts to fairly administer the Workers' Compensation Law of the State of South Carolina.

Respectfully submitted,
Marion F. McFarland, III, M.D., Chairman

PEER REVIEW COMMITTEE

The SCMA's Peer Review Committee was reactivated in order to review the Diagnostic Testing Guidelines which were mailed to physicians in March, 1987 by Blue Cross Blue Shield of South Carolina. A copy of the guidelines was mailed to each specialty representative of the committee for review and comment. At a meeting of a core group of the committee on January 27, 1988, the comments submitted by the rest of the committee were discussed and a proposed letter to Blue Cross Blue Shield of South Carolina and the AMA was developed for SCMA Board of Trustees' review.

The core committee also conducted a practice pattern review for the State Health and Human Services Finance Commission (Medicaid).

The committee also provided assistance to a SCMA member in a disputed claim with a third party payor.

Our committee remains available to assist SCMA members, hospitals and third party payors in conducting individual claim and practice pattern review.

Respectfully submitted,
Ed Proctor, M.D., Chairman

PERINATAL AND MATERNAL HEALTH COMMITTEE

As part of our efforts to improve perinatal and maternal health throughout the state, our committee has met quarterly with representatives of the Department of Health and Environmental Control, the State Health and Human Services Finance Commission, and the Department of Social Services. In addition, members of our committee serve individually as advisors to these state agencies.

Issues discussed with DHEC include: licensing of hospitals as Level I, II, and III providers; the need for positive HIV test results to be included in the medical records of DHEC clinic patients; and, in a meeting with Mike Jarrett, Commissioner of DHEC, we discussed ways of decreasing the number of women in South Carolina who are not receiving timely prenatal care.

Through interaction with DSS, our committee

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achieved an important change in their procedure for the investigation of the medical neglect of infants. This change resulted in the DSS procedure clearly indicating that a determination of medical neglect is based on the findings of the attending physician and that the attending physician is not subject to DSS investigations of neglect.

Our discussions with the Finance Commission, the administering agency of the Medicaid and medically indigent programs, resulted in a change in the billing requirements on high risk babies, which prior to committee input resulted in the withholding of physician's payment if a form 204 was not completed. Moreover, the Finance Commission now allows electronic submission of this form as a result of our input.

Finally, we have continued our maternal mortality review as well as conducted initial discussions with DHEC regarding review of perinatal mortalities.

Respectfully submitted,
Tom L. Austin, M.D.,
Harold R. Rubel, M.D., Co-Chairmen

PRIMARY CARE/MEDICAID AND INDIGENT CARE COMMITTEE

Since the 1987 Annual Meeting of the SCMA, our committee has remained active in addressing issues of concern to physicians who treat Medicaid and indigent patients. We have also worked to encourage all physicians to accept their fair share of these patients.

The work of our committee has been enhanced by the employment of Gavin Appleby, M.D., at the State Health and Human Services Finance Commission (the State Medicaid Agency). We are equally fortunate to have direct input to the Finance Commission by two of our members, Jim Hammond, M.D., and Melton Stuckey, M.D., who also serve on the Finance Commission's Medical Advisory Committee and Advisory Committees, respectively.

Issues we have discussed with the Finance Commission staff range from AIDS to billing and audit requirements. Through our efforts, the Finance Commission has agreed to eliminate the one dollar patient copayment and restore physician reimbursement by this amount, effective

July 1, 1988. Although we had not opposed the copayment requirement itself, Medicaid was unable to implement this in outpatient departments and for non-emergency visits to the emergency room due to administrative difficulties, and we opposed this inequity and unwise incentive for patients to use a much more expensive setting.

We have also been successful in receiving clarifications regarding reimbursement for telephone consultations for home health care, home visits, and other services such as intensive counseling of families. These clarifications were published in the February, 1988 newsletter of *The Journal of the South Carolina Medical Association*.

On a personal basis, our committee received satisfaction in helping a patient in need of a total hip replacement find a physician to perform the surgery under the MIAF program after the patient had experienced months of red tape. Dr. Jennings Owens should receive a note of thanks from all of us regarding his efforts on behalf of this patient.

Our work extended beyond the Finance Commission to the Department of Social Services due to our concern with delays in pregnant women receiving approval for Medicaid. Commissioner Solomon arranged time out of his busy schedule to visit with our committee, and it appears that efforts are being made in the Department of Social Services to make N.G.A. (pregnant women not otherwise qualified for Medicaid or AFDC) applicants a priority.

Prior to the 1988 meeting of the SCMA House of Delegates, our committee will also have met with the new Executive Director of the Finance Commission, Eugene A. Laurent, Ph.D., to discuss Medicaid funding and other relevant issues.

Respectfully submitted,
Benjamin E. Nicholson, M.D., Chairman

PUBLIC RELATIONS COMMITTEE

After considerable study, Charles R. Duncan, Jr., M.D., President of the SCMA, concluded that the Public Relations Committee should be comprised of members who are most active in media relations and several advisors. Therefore, the committee now consists of the SCMA president and president-elect, who are the official spokespersons

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for the Association; immediate past president; one member at large; and one or two auxiliary representative(s).

Prior to appointment of the committee, the SCMA Board of Trustees acted in an advisory capacity on issues brought before them by staff. Worthy of mention, the Board approved the 1987-88 Public Relations Plan as developed by staff, and participated in a speaker's training program conducted at the 1987 fall Board Retreat.

Other noteworthy public relations activities conducted throughout the year include cosponsoring an AIDS Education/Media Campaign with DHEC; sponsoring public service announcements on teen suicide and reviewing other available PSAs; scheduling radio and television appearances; scheduling interviews for newspapers; completion of the child abuse videotape; mailings of position statements and other newsworthy information to county medical societies, specialty societies, SCMA committee chairpersons and selected auxiliary committee chairpersons; organization of the SCMA Library and videotape loan program; development of SCMA membership poster and SOCPAC brochure; coordination and implementation of "Personal Care" Medicare Program; and coordination of SCMA Speakers Bureau.

The Public Relations Committee members reviewed PR activities being conducted by a staff throughout the year and advised staff on issues brought to the committee's attention. The committee approved expanding the Broadcast Journalism Award to include separate awards for radio and television and also advised staff on proceeding with future development of the SCMA Speakers Bureau.

I personally wish to thank the Board of Trustees for their taking an active role in advising staff during the interim prior to appointment of the Committee. I also wish to thank individual committee members for their time and input as well as staff for their work and support throughout the year.

Respectfully submitted,
Dallas W. Lovelace, III, M.D., Chairman

SCMA/JUA RISK MANAGEMENT COMMITTEE

The major efforts of our committee this past year have been directed to improving the review process in medical liability suits. We are involving the specialty societies more in finding physicians to review charts and to go further with depositions and court testimony. A meeting with the specialty society representatives in February highlighted this effort. In connection with this, workshops to help prepare physicians for this endeavor will be held at the South Carolina Medical Association Annual Meeting on Friday and Saturday April 29-30, 1988.

We have contacted the two medical schools and are working on plans for meetings with faculty, house staff and students later this year.

The committee is available for meetings on professional liability matters with county societies, specialty groups and others throughout the year.

We appreciate the cooperation from the JUA Board and the SCMA Board this year and hope that our efforts to improve the professional liability climate in our state have been effective and will continue to be so. Mr. Cal Stewart, Manager of the JUA, continues to provide most valuable help and advice to us. Joy Drennen of the SCMA staff does a great job in handling records to see that they reach the reviewing physicians; and Bill Cantey, M.D., continues his good work in the initial review and assignment of records to the members of the committee.

The Medical Liability Bulletin continues to be well received by SCMA members and others. We received many favorable comments about it, and we are most fortunate to have Joy as the Editor and catalyst for this publication.

I would like to express my sincere appreciation to the members of the committee who give so much of their time and ability to see that the program is effective. We all owe a great deal to Bart Barone, M.D., John Hunt, M.D., Roy Skinner, M.D., Danny Paysinger, M.D., Billy Fairey, M.D., and John Brown, M.D.

Respectfully submitted,
Euta M. Colvin, M.D., Chairman

SCMA/S. C. HEART ASSOCIATION JOINT COMMITTEE ON CARDIAC REHABILITATION

This committee was formed in 1984 for the purpose of developing and implementing a mechanism for certification of cardiac rehabilitation programs in South Carolina, including onsite inspections of the facilities. In addition, the committee encourages the development of new cardiac rehabilitation programs in the state, and plans and coordinates workshops for training potential staff members of new programs.

The committee is composed of nine members, four representing each organization and one member from the Department of Vocational Rehabilitation.

South Carolina is one of only two such states in the nation to have developed and implemented a model certification program. At the present time, 14 cardiac rehabilitation programs in South Carolina have either provisional or full certification. We take pride in our accomplishments thus far and look forward to continuing to lead the way in this important area of health care for our citizens. We are very appreciative of the support of the SCMA in this effort.

At the last meeting of the joint committee on February 18, plans were initiated to form a South Carolina Association of Cardiac Rehabilitation Programs. We hope to formalize these plans and hold our first meeting during the SCMA Annual Meeting in 1989.

We appreciate the opportunity of making this report to the 1988 SCMA House of Delegates.

Respectfully submitted,
William Webster, IV, Ph.D., Chairman

SCMA/SCNA JOINT LIAISON COMMITTEE

This committee has not met during the past calendar year. I do think the committee needs to be kept in place in case there are issues for the committee to address. However, this past year we have not had anything pressing enough to call the committee to meeting.

Respectfully submitted,
J. M. Lindsey, Jr., M.D., Chairman

April 1988

**There are
three million
Americans
alive today
who have had
cancer. And
now one out
of two cancer
patients
get well!**

"While we can think
While we can talk
While we can stand
While we can walk
While we can fight
While we can give
Join our quest for
Life right now!"



Leslie Uggams, Honorary
National 75th Anniversary
Chairperson, for the
American Cancer Society.

Join us with your
generous contributions
of money and time.

Commemorating
75
Years of Life!
AMERICAN
CANCER
SOCIETY
Join us

REPORT OF THE EXECUTIVE VICE PRESIDENT

Mr. Speaker, members of the House of Delegates, SCMA members and guests. It has certainly been a pleasure to serve as your Executive Vice President for another year. In this report I would like to review my activities on your behalf over the past year.

A major portion of my time has been spent working with the various state agencies and legislative committees with which the SCMA must interface. I have regularly attended the Board meetings of the South Carolina Hospital Association, and as a result of that involvement, I believe we enjoy an excellent relationship with SCHA. Regular contact has been maintained with the Executive Director of the State Board of Medical Examiners, the Chief Insurance Commissioner, the Executive Director of the Health and Human Service Finance Commission and the governor's staff. Within the federation of medicine, liaison has been maintained with the county medical societies and the AMA. On three occasions, I accompanied delegations from SCMA to AMA meetings. These were the AMA Annual Meeting in June, the midwinter meeting in December and the Leadership Conference in February.

Serving as Treasurer and on the Steering Committee of the South Carolina Civil Justice Coalition has taken up a great deal of my time over the past year. Having the responsibility for fundrais-

ing as well as providing staff support to the coalition has been very time consuming. Liaison with the state legislature has improved significantly now that we have two full-time people plus myself involved in legislative activities.

Staff has added some new member benefits this past year, the most notable being the "Physicians Guide to South Carolina Law." Another service which is being made available this spring in conjunction with the AMA is the claims processing system developed by Medical Payment Systems.

The on-going legislative activity at the national level regarding changes in the Medicare program has kept the staff very busy attempting to keep track of these constant changes. Through the newsletter, which is published in the *SCMA Journal*, we have distributed information as it has become available.

Overall, I feel the SCMA is a healthy organization which is fulfilling its mission as the professional organization of medicine in South Carolina.

Finally, personally, and on behalf of the staff, we thank you for affording us the opportunity to serve the physicians of South Carolina and look forward to continuing our efforts on your behalf.

Respectfully submitted,

William F. Mahon, Executive Vice President

REPORT OF THE SCMA DELEGATION TO THE AMA

The major activities of the Delegation occur at the meetings of the House of Delegates of the AMA. These have been reported in some detail in the *JSCMA* as a special insert in the July issue (AMA Annual Meeting in Chicago, Illinois), and the February issue as a regular article (AMA Interim Meeting in Atlanta, Georgia). The use of the special insert, in order to get the report before the SCMA members at an earlier date, will be tried again this year.

During the past year the Delegation developed and the Board of Trustees approved an *Outline of Operating Procedures* which has facilitated the work of the Delegation, including the participation of larger numbers of SCMA members. Meetings of the Special Sections of the AMA just prior to House of Delegates' meetings have become an important part of Annual and Interim Meeting activity. We were gratified that several South Carolina physicians took an active part in the newly organized Young Physicians Section as well as the Hospital Medical Staff Section started a few years ago. Students from both the University of South Carolina and the Medical University of South Carolina participated actively in the Medical Students Section. We were also proud of the student group for organizing the Palmetto State National Medical Student Conference, held in Columbia, September 25-27.

The Delegation would like to encourage even greater participation in various activities of the Special Sections.

We are pleased that Randy Smoak has played a

prominent role in the activities of the AMPAC Board and is serving as Secretary of AMPAC this year. Through the efforts of our Delegation, I have had the privilege of serving on the Council on Constitution and Bylaws for three terms, including acting as Chairman during the past two years.

We are delighted that James E. Davis, M.D., President-Elect of the AMA, and his wife, Margaret, have accepted the invitation to be our guests at the Annual Meeting of the SCMA. We have had exceptionally close ties for many years with Jim, who is from our neighboring state of North Carolina, and who has been an outstanding leader of the AMA in many capacities.

The delegates and alternate delegates express their appreciation for the privilege of representing the Association at the AMA and also participating in the SCMA Board of Trustees as non-voting members. We trust that our attendance record at Board meetings attests to our continuing interest in and dedication to the affairs of the Association.

We repeat our perennial request for input from Association members and our standing invitation for any SCMA member to join in the activities of the SCMA delegation at both Annual and Interim Meetings of the AMA.

Respectfully submitted,
John C. Hawk, Jr., M.D., Chairman,
AMA Delegation

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REPORT OF THE EDITOR OF *THE JOURNAL*

The Editorial Board continues to welcome the suggestions of SCMA members regarding the possible directions of *The Journal*. Ours ranks among the oldest journals of its type. We continue to emphasize its original purpose: to be a journal uniquely for the physicians of South Carolina. One SCMA member recently suggested that we consider carrying from time to time, "regional special issues," whereby all of the articles would be written and edited by physicians of one or another area within our state. This and other concepts will be discussed at our Editorial Board luncheon at this year's Annual Meeting.

I again express my appreciation for the fine work Joy Drennen continues to do as Managing

Editor. Her assistance not only with editorial duties but also with advertising solicitation has been indispensable. Many of the periodicals with whom state journals such as ours compete for advertising revenues—such as the commercially-published "throwaways"—have large, well-budgeted staffs. Our continued viability owes to a large extent to Joy's efforts. This viability is, I feel, important to the SCMA especially because *The Journal* serves as tangible evidence that we are indeed a professional organization.

Respectfully submitted,
Charles S. Bryan, M.D., Editor

REPORT OF THE SOUTH CAROLINA INSTITUTE FOR MEDICAL EDUCATION AND RESEARCH (SCIMER)

The SCIMER Board met two times during the past year and both meetings were well attended. We have essentially a new group this year, and much interest was noted among those members who attended the meetings.

SCIMER's ability to provide scholarships and other activities was enhanced this year by the action of the SCMA Board of Trustees which allowed a check off on the billing to members for a contribution to SCIMER. This is most appreciated, and we hope it will continue in subsequent years.

We plan to continue to provide scholarship awards to students at our two medical schools in conjunction with the South Carolina Medical Association Auxiliary. This year we will award ten scholarships, five to each school, which is an increase over the eight awarded last year. The

Stuckey Scholarship Award will again be made to a student who meets the requirements. Again, this year due to a substantial donation from Spartanburg Cardiology Group, awards will be made to two upstate medical students. We hope to continue to increase the number of scholarship awards with increasing donations from our membership and others.

The Leonard Douglas Memorial Lecture will be given at the House of Delegates' meeting on Thursday, April 28. We are working with the Medical Ethics Committee of South Carolina Medical Association in this effort, and the committee has arranged for Mark Siegler, M.D., from Chicago to give this address. We continue to appreciate donations so that funding for this activity will be available for many more years.

We are working with the SCMA Auxiliary on

REPORTS

the Health Education Van Project and have committed some funds to this endeavor. This is an interesting and exciting project, and we hope that it will be successful. SCIMER will be sharing a booth at the annual meeting with the Auxiliary to provide information about the Van project, SCIMER, its activities and its potential.

It has been a pleasure to serve with the members of this Board during the past year. We appreciate the confidence of the SCMA Board of Trustees.

Respectfully submitted,
Euta M. Colvin, M.D., President

REPORT OF THE SCMA MEMBERS' INSURANCE TRUST

The SCMA Members' Insurance Trust has completed another year of providing a comprehensive health insurance program for members of the SCMA, their families and office staff.

The Trust renewed the contract with Provident Life & Accident Company to provide claims administration.

This year there was an increase in premiums due to a \$548,000 loss to the Trust.

The Trust is operating on a fiscally sound basis and is maintaining adequate reserves to cover any unforeseen contingency.

Due to a survey of members of the Trust, the Board implemented a new Mid Option plan and revised the Low Option plan. Both plans feature deductibles and co-payments. These plans became available to members on March 15, 1988.

With the addition of these new plans, I am very optimistic about the future of the Trust.

Dr. Carter Maguire retired from the Board due to health reasons. Dr. Maguire devoted five years to the Board and will be sorely missed.

I would like to express my sincere appreciation to the members of the Board and the SCMA staff for their hard work this past year.

Respectfully submitted,
Edward Mattison, M.D., President

REPORT OF THE SOUTH CAROLINA MEDICAL CARE FOUNDATION

The South Carolina Medical Care Foundation has had minimal activity this past year. We have participated in a small amount of review in the private sector and have assisted several hospitals with various internal problems.

As President of the Foundation, I have been a member and actively participated in the meetings of the PRO Liaison Committee of the South Carolina Hospital Association.

As a personal note, I am completing my final term on the Foundation Board and would like to express my appreciation for your support and cooperation.

Respectfully submitted,
Edward Catalano, M.D., President

REPORT OF THE SOUTH CAROLINA POLITICAL ACTION COMMITTEE

The South Carolina Political Action Committee has completed the 1987 year with a total of seven hundred sixty-five members, an increase of six percent. As of the writing of this report, we have already exceeded eight hundred PAC members in 1988, which is an all time high.

With this year being an election year, both SOCPAC and AMPAC will assist in the reelection efforts of those legislators who share our philosophy and ideals. Our support is very important to those who participate in both the state and federal government.

I should also make mention of the fact that both the House and Senate are up for reelection this year, and we will be participating at a higher financial level than ever before. We also encourage SCMA members to participate in local campaigns and actively support the candidate of their choice.

On behalf of the SOCPAC Board, I wish to thank you for giving us the opportunity to serve on this vitally important committee.

Respectfully submitted,
Randolph D. Smoak, Jr., M.D.
Chairman, SOCPAC Board

RESOLUTIONS

SUBMITTED BY: *South Carolina
Dermatological Association*
SUBJECT: **LICENSING OF
TANNING FACILITIES**

WHEREAS, Skin cancer is the most common cancer and over 500,000 Americans will get skin cancer this year and one in seven Americans will develop some form of skin cancer during their lifetime; and

WHEREAS, Melanoma, the most deadly of the three types of skin cancer, is increasing faster than any cancer except lung cancer in women and one in 150 people developed melanoma in 1987 and by the year 2000 the incidence is predicted to be one in 90; and

WHEREAS, Prolonged and/or intermittent over-exposure to ultraviolet radiation from the sun is the primary cause, and the majority of skin cancers could be prevented if individuals would take simple precautions against the sun's ultraviolet rays; and

WHEREAS, Tanning salons have developed and increased in number the past several years and over 4.5 million people are using these tanning salons; and

WHEREAS, These tanning salons use the long ultraviolet waves (UVA) claiming a "safe tan, safer than the sun" and cure for various skin diseases, including acne and are misleading advertisements; and

WHEREAS, These longer UVA wavelengths penetrate deeper into the skin than the shorter sun burning UVB wavelengths and cause more damage to collagen and blood vessels with resulting pre-mature aging of the skin, cause abnormal skin sensitivity in persons who may be taking certain drugs, including some tranquilizers, diuretics, an-

tibiotics, high blood pressure pills and birth control pills, and can damage unprotected lens of the eye resulting in cataracts, contribute to the development of skin cancer in animals, augment the sunburn caused by UVB and cause additional skin cell injury and aggravate certain diseases such as lupus erythematosus; and

WHEREAS, While the F.D.A. regulates the manufacture of these tanning devices, there is no provision regulating the proper use of tanning equipment by salon operators; therefore be it

RESOLVED; The South Carolina Dermatological Association go on record as realizing the public health threat these tanning salons pose and lack of any known beneficial effects to human health from these tanning booths; therefore, be it

RESOLVED; That we urge the South Carolina Medical Association to bring all of its collective resources to bear to 1) educate the public to the potential risks from using the tanning salons, 2) lobby the legislators to enact laws which will require licensing of these tanning salons with local health departments as has been done in three other states, 3) require written exams on the proper use by operators of these tanning salons, 4) require informed consent forms to be signed by those using these tanning salons, 5) require warning signs be posted listing the potential hazards to one's skin and health, 6) require doctor's consent if oral medications are taken and 7) other regulations as deemed necessary to ensure their proper and safe use.

SUBMITTED BY: *South Carolina
Dermatological Association*
SUBJECT: **HEALTH INSURANCE:
FREE CHOICE NOTICE**

WHEREAS, Existing law does not require health care service plans, disability insurers, non-profit hospital plans which restrict the choice of physicians or health care facilities to inform prospective enrollees that their choice of physician or health care facility may be affected; and

WHEREAS, The public may be misled by health insurance policies not clearly stating limited access to physicians and hospitals, causing unpleasant incidences to occur after the fact; therefore, be it

RESOLVED; The South Carolina Dermatolog-

RESOLUTIONS

ical Association urges the South Carolina Medical Association to lobby for legislation requiring all health insurance companies selling policies in the state of South Carolina which limit access to physicians or hospitals to boldly state this fact in all promotional material and in the actual policies that are given to consumers when these insurance plans are purchased.

SUBMITTED BY: *Sumter-Clarendon Medical Society*

SUBJECT: **TOXIC WASTE**

WHEREAS, We, the members of the Sumter-Clarendon-Lee Medical Society, feel that our foremost obligation is to protect the health and well-being of the citizens we serve, and feel that the hazardous waste landfill operated by GSX, currently doing business in Sumter County, poses a serious potential danger to the health and well-being of our citizens and all of South Carolina; and

WHEREAS, In 1985, the South Carolina Medical Association resolved that they also are opposed to the dumping of toxic waste from other states into the state of South Carolina, and in particular they are opposed to the further operation of a toxic waste dump at Pinewood, South Carolina; and

WHEREAS, The South Carolina Medical Association has supported this resolution also in 1986 and 1987; and

WHEREAS, This toxic waste dump near Pinewood, S. C. is really 600 feet from Lake Marion, contains over a billion pounds of hazardous material, is continuing to grow at an alarming rate of at least 740 thousand pounds daily, and truly represents potential problems that are likely eternal, the risk of which only get worse for every day closure is further delayed; and

WHEREAS, It is South Carolina that must bear these eternal risks for storage in its boundaries with its scarce resources; and

WHEREAS, This issue, and the issue of toxic waste in general, is of utmost importance to this state; and

WHEREAS, This issue has been studied by the Board of the South Carolina Medical Association for three years; now, therefore, be it

RESOLVED, That the South Carolina Medical Association does endorse again the previous resolutions of 1985, 1986, and 1987, and the previously adopted motion by its Board of Trustees in September, 1986, and that the President of the SCMA be directed to implement these immediately.

SPECIAL GUEST: JAMES E. DAVIS, M.D. PRESIDENT-ELECT, AMERICAN MEDICAL ASSOCIATION

James E. Davis, M.D., President-Elect of the American Medical Association, will address the SCMA House of Delegates on Sunday, May 1, 1988.



James E. Davis, M.D., a surgeon from Durham, North Carolina, was chosen President-Elect of the American Medical Association at its June, 1987 Annual Meeting. Before that Doctor Davis had served as Speaker of the AMA House of Delegates since June, 1984, after serving as its Vice Speaker since 1981.

Doctor Davis has long been active in organized medicine. Among the positions he has held are President of the North Carolina Medical Society, the North Carolina Surgical Association, the North Carolina Chapter of the American College of Surgeons, the North Carolina Division of the American Cancer Society, and the Greater Durham (N.C.) Chamber of Commerce. He is a former Governor of the American College of Surgeons. Doctor Davis currently serves as Chairman of the Board of Directors of the North Carolina Institute of Medicine, President of the Medical Mutual Insurance Company of North Carolina, and Chairman of General Surgery of the Pan American Medical Association.

A native of North Carolina, Doctor Davis completed his undergraduate work at the University of North Carolina in 1940. He has served as President of the General Alumni Association and of the Medical Alumni Association. Both the School of

Medicine and the General Alumni Association of the University have honored him with Distinguished Service Awards.

Doctor Davis received his M.D. degree from the University of Pennsylvania Medical School in 1943, and completed his internship and residency in surgery at the New York Hospital-Cornell University Medical Center. Doctor Davis is a Professor of Surgery at the University of North Carolina School of Medicine, Associate Professor of Clinical Surgery at Duke University School of Medicine, and former Chairman of the Department of Surgery at the Durham General Hospital. He is a Diplomate of the American Board of Surgery and a Fellow of the American College of Surgeons. He and his wife, Margaret, are the parents of two sons, Kenneth Royall Davis and George Harrison Davis.

Doctor Davis is the author of many papers on topics of general and thoracic surgical interest and has written extensively on the subject of ambulatory surgery. He is author of the text, *Major Ambulatory Surgery* (1986), a member of the Editorial Board of the *Journal of Ambulatory Care Management*, and has served as Guest Editor, *Surgical Clinics of North America*.

SOC PAC LUNCHEON SPEAKER: CHARLES F. RUND

Mr. Charles F. Rund is the featured speaker for the Annual SOCPAC Luncheon, scheduled for Saturday, April 30, 12:45 p.m. in the Magnolia Ballroom.



Mr. Rund is President of Charlton Research, Inc., an information-based survey research company developing strategies for business and politics. The company's special focus is analyzing change in today's socio-political environment.

Charlton Research, Inc. has conducted research and consulting assignments with more than 200 corporations and elected officials nationwide. In the 1986 election, Charlton Research, Inc. was involved in 21 political campaigns including four U. S. Senate and three Gubernatorial races. The company has also worked in 41 Congressional campaigns in the last three election cycles.

Prior to joining Charlton Research, Inc. in 1984, Mr. Rund was director of Survey Research for the Reagan-Bush '84 campaign. From 1980 to 1983 he served as Executive Vice President of Tarrance Associates, specializing in the analysis of voter and

electorial behavior.

In the 1970's, Mr. Rund founded a San Francisco survey company, the Public Sector, Inc., and served as director of "Strategic Futures" for Dayton Hudson Corporation. Mr. Rund received his B.A. from Macalester College in St. Paul, Minnesota, with postgraduate work in social ethics at San Francisco Theological Seminary.

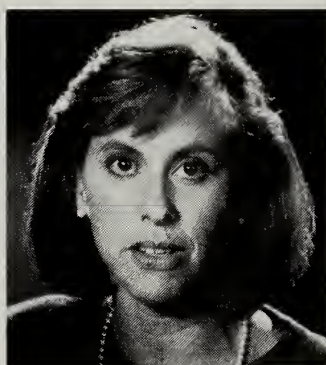
Mr. Rund served as an election night analyst for CBS News in 1984 and 1986. He is currently President of the Pacific Chapter of the American Association of Public Opinion Research and a Past President of the American Marketing Association, San Francisco Chapter. Mr. Rund also served on the National Council on Drug Abuse in the early 1970's and was a Founding Director of Youth Emergency Services (YES) hotline for Drug Counseling.

One out of ten women will develop breast cancer!



"I know.
I was that one in ten.
And mammography
helped save my life."

Debra Strauss



Thanks to mammography, a fast and simple x-ray technique, breast cancer can now be detected at its earliest stage—while it is still highly curable. If you're over 35, the American Cancer Society urges you to please call your doctor for an appointment.

Commemorating

75

AMERICAN
CANCER
SOCIETY

Years of Life!

Join us

Editorial

ETHICS AND AIDS—ONE YEAR LATER

Among the highlights of the 1987 Annual Meeting was the announcement by incoming president Charles R. Duncan of his intent to establish a standing Ethics Committee. One year later, our 140th annual meeting should provide a showcase for this committee's depth and breadth. An entire morning will be given to two AIDS-related debates: (1) can a physician ethically refuse to treat a patient whose condition is within the physician's realm of competence solely because the patient is seropositive; and (2) what is the patient's right to know that his or her physician is seropositive? It should be an interesting morning. These are problems over which honest people of good will can have firmly-held but divergent opinions.

Not long ago, the subject of "AIDS and Ethics" was reviewed by Dr. Albert Jonsen and his colleagues at the University of California.¹ They concluded that "two essential features of sound ethical discussion are as yet absent" in the AIDS epidemic. These are (1) reliable information about the disease, with regard to its nature and mode of transmission; and (2) lack of sufficient "prolonged and serious conversations by knowledgeable parties." In my opinion, Dr. Jonsen and his colleagues are wrong on both counts. I suspect that after all is said and done at our annual meeting, SCMA members will hold divergent opinions and that it will be for neither of these reasons.

First, we have excellent information about the transmission of the disease.² Sure, there will be many more studies and also anecdotal case reports to define more accurately the risk of transmission from various activities. Nevertheless, especially considering that this disease was not even recognized until 1981, we know about its transmission with incredible accuracy. Second, there has been no dearth of "prolonged and serious conversations." Innumerable conferences have been held at every conceivable level: local, state, regional, national, international. The problem addressed by Dr. Jonsen and his colleagues, I submit, tells us far less about the AIDS epidemic than it does about

the nature of ethics.

Ethics is usually defined as the study of standards of conduct and moral judgment (that is, moral philosophy). It is almost universally acknowledged that our society needs help. *Time* magazine recently reported that more than 90 percent of 1,014 American adults agreed with the statement that morals have deteriorated because parents fail to take responsibility for their children.³ It seems possible—just possible—that the parents' dilemma in turn reflects the lack of clear directives given by the ethicists themselves. The ethicists, in turn, grapple with conflicting sets of rules and standards. Two decades ago, for example, the noted ethicist Alasdair MacIntyre wrote:

We cannot expect to find in our society a single set of moral concepts. . . . Conceptual conflict is endemic in our situation. . . . Each of us therefore has to choose both with whom we wish to be morally bound and by what ends, rules, and virtues we wish to be guided.⁴

If the ethicists cannot agree on standards, then how can we be expected to enforce *any* standards among our children or among anyone else, for that matter?

We should empathize with the ethicists. To begin with, there are different ways to go about setting such standards. These are generally considered in three groups: *normative* ethics; *consequentialist* ethics (of which there are two types: situational and utilitarian); and *existential* ethics. Each of these approaches has its strengths and limitations.

Normative ethics derives from the transcendent "ought," as classically expressed in the Ten Commandments. Its strength is a clear standard of right and wrong. Its weaknesses are (1) *how* to derive the standard and (2) how to remain sensitive to special situations. *Situational* ethics addresses the latter desideratum but the rules seem to be made up as one goes along. We are left without a clear sense of what is "good." In *util-*

itarian ethics ("the greatest good for the greatest number"), one senses the broad picture but the individual is engulfed by the collective. Most physicians probably find it hard to take *existentialist* ethics seriously. Seeking to maximize personal freedom, this approach favors the autonomous fulfillment of personal desires. Almost by definition, it cannot be universalized. Immediately, we begin to see how each of these approaches could be used in debating AIDS-related issues.

The problem is even more fundamental. The essential disagreement seems to be about the nature of man. Does so-called "natural man," man in his native state unfettered by civilization or law, have any moral standards whatsoever? It depends on whom you ask. Writing in the thirteenth century, Thomas Aquinas said "yes." Writing in the seventeenth century, Thomas Hobbes said "no." It is Hobbes' view that has prevailed. Hence, we are thrown back to the pre-Socratic sophists of ancient Greece. Men are either sheep or wolves, and all morality is but a compromise borne of self-interest. There are no absolute standards. All is value relativism.

Today's philosophers seem unable to tell us the meaning of such things as "morals," "values," and "standards." If they can't agree, how can we? More recently, MacIntyre tells us:

The most striking feature of contemporary moral utterance is that so much of it is used to express disagreements; and the most striking feature of the debates in which these disagreements are expressed is their interminable character. I do not mean by this just that such debates go on and on—although they do—but also that they apparently can find no terminus. There seems to be no rational way of securing moral agreement in our culture.⁵

It is disconcerting to realize how much of what ought to be decided by moral consensus is in fact decided only by the courts. Still, we must try. Organizations such as ours, by taking stands, can help. And at the very least, debates such as those scheduled for this year's annual meeting remind us of the complexities. What do we mean by "right" and "wrong?"

—CSB

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3. "What's wrong." *Time*, May 25, 1987.
4. MacIntyre A: *A Short History of Ethics* (New York: Macmillan Publishing Company, 1966), p. 268.
5. MacIntyre A: *After Virtue* (2nd edition, Notre Dame, Indiana: University of Notre Dame Press, 1984), p. 6.

**ON THE COVER:
MANNING SIMONS, M.D.
1846-1911**

During his tenure as President of the Medical Society of South Carolina, Dr. Manning Simons of Charleston had the unique pleasure of presiding over the celebration of the 100th year of its existence. On December 9, 1889, Dr. Simons called to order a meeting of the Society at South Carolina Society Hall in Charleston where he, along with the succeeding President, T. Grange Simons, M.D., and other members of the society, raised their glasses as toasts were offered to them by the city of Charleston, the state of South Carolina and many of the clergy. The society was now 100 years old.

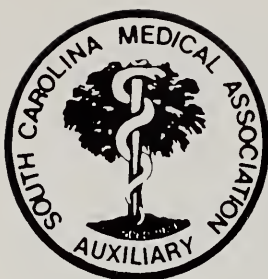
Dr. Simons was a native of Charleston and attended the College of Charleston prior to the outbreak of the Confederate War. He volunteered for service in the Confederate Army and served as a courier on General Hardee's staff. Following that internecine conflagration, young Simons entered the Medical College of the State of South Carolina in Charleston and was graduated in 1868. He practiced medicine in Charleston his entire life, specializing in Gynecology. He was extremely active in academic medicine in Charleston and served on the faculty of The Medical College many years.

On the cover is a collage depicting Dr. Simons' medical career. The bust of Dr. Simons is available for examination in the Waring Historical Library. In addition, in the photograph is his surgery case with typical surgical instruments of the time. There is an open copy of the *Transac-*

tions of the South Carolina Medical Association with his picture dated 1903, the year that he was President of that organization. Two of the instruments from the case are a trephine and an instrument used for radical repair of the hernia. There is also a "Report of Committee on State Medicine and Public Hygiene" of which Dr. Simons was the Chairman. Lastly, there is a card for admission to one of his lectures on Practical Anatomy given 1878-79.

Dr. Simons was 65 years of age at his death. During his career he served as President of the Southern Surgical and Gynecological Association, President of the South Carolina Medical Association and President of the Medical Society of South Carolina. He was a member of the American Medical Association and was surgeon for the Southern Railroad and for the Charleston Consolidated Railroad and Lighting Company. He was a member of many organizations and societies in Charleston, among which were the United Confederate Veterans, Camp Sumter, the Society of the Cincinnati, the German Artillery and the German Friendly Society. His obituaries in the *Charleston News and Courier*, April 21, 1911 carry extensive accounts of the funeral and interment ceremonies. Apparently one of the largest congregations that was ever assembled in St. Paul's Church attested to the reputation and love that the Charleston community had for this distinguished physician.

—THOMAS M. LELAND, M.D., Ph.D.



SOUTH CAROLINA MEDICAL ASSOCIATION AUXILIARY



REPORT OF THE PRESIDENT OF THE SCMA AUXILIARY TO THE 1988 SCMA HOUSE OF DELEGATES

As the 1987-88 Auxiliary year draws to a close and we make plans for the convention and the 65th birthday of the auxiliary to be celebrated at the luncheon on Friday, April 29, I reflect on what can possibly be recorded in our history for this year.

The auxiliary has grown this year although our total membership did not increase. We have tried to update our recordkeeping with the help of the SCMA staff.

Nine county presidents-elect attended Leadership Confluence I and II, as did this president, the president-elect, and the nominated president-elect. It is through the knowledge that we receive at these sessions that we gain insight into auxiliary finances and various programs.

This year the auxiliary has experienced an increase in SOCPAC membership. We began our legislative activities with a workshop held in August for county legislative chairmen and all interested auxiliaries. County auxiliaries participated in "Days at the Legislature" held Thursdays in February and lobbied for the Comprehensive Health Education Bill.

Again this year the auxiliary supported AMA-ERF, American Medical Association Education and Research Foundation. To date, over \$19,000.00 has been collected for distribution to medical schools across our country. At the opening session of the SCMA House of Delegates on Thursday, checks will be presented to the Deans of both the Medical University of South Carolina and the University of South Carolina School of Medicine. Monies presented at this time will reflect contributions made during the calendar year 1987.

The auxiliary, with the assistance of South Carolina Institute for Medical Education and Research, SCIMER, will award a total of ten (10) scholarships at convention. This will bring to five (5), the number of scholarships for each of the two (2) South Carolina medical schools. Several county auxiliaries also have health-related scholarships that are presented locally each year.

The auxiliary is playing an active role on the "Impaired Physicians" Committee. The name of the auxiliary committee is being changed to the "Physicians' Family Support Committee." It is felt that the auxiliary can better serve under this umbrella, and will be working closely with the SCMA "Impaired Physicians Committee" Chairman.

Adolescent health has been foremost in the minds of the auxiliary members this year. Teen suicide posters, as well as seat belt posters have been distributed to all counties for local distribution.

I attended the Southeastern Regional "White House Conference for Drug Free America" held in December in Jacksonville, Florida, as well as the National Conference held February 28-March 3 in Washington. Many points were brought out at both of these meetings, but every day the suggestions always came back "support groups and education regarding the effects of drugs on the body." These meetings



THE MANAGEMENT OF EARLY BREAST CANCER (CLINICAL STAGE I)*

RICHARD D. MARKS, JR., M.D.
JOSEPH M. JENRETTE, III, M.D.
LETA S. CARLSON, M.D.

One in 11 females will develop breast cancer in their lifetime.¹ With all the recent publicity and awareness concerning self examination and early detection methods, it is estimated that more than 60 percent of patients will ultimately be diagnosed in Stage I. This is very good and will lead to a 90 percent cure rate and thus an improvement in the overall survival rate for patients with breast cancer. How will these facts, plus the popularity of conservative surgery, change the management of breast cancer in the future? Regardless of what happens, nothing will change the fact that a cancer of the breast presenting in any size or any stage will require that the whole breast be treated either by surgery and/or radiation therapy. However, the smaller the cancer or earlier the stage, the more likely the patient will be a candidate for lumpectomy and radiotherapy. Patients who are clinical Stage I, but ultimately become pathological Stage II after a lumpectomy will need adjuvant chemotherapy and it seems that if they are premenopausal, the chemotherapy will impart a survival benefit.

What are the prerequisites for conservative surgery plus radiation therapy? First and foremost is that the female is interested in preserving her breast. This is important because of the following reasons. Studies to date have shown that lumpectomy followed by radiation therapy does not pro-

duce any better results than modified mastectomy alone, if the mastectomy is followed by radiotherapy when indicated.^{2, 3} And secondly, a modified mastectomy while producing a cosmetic defect probably produces no significantly greater functional loss to the patient than lumpectomy, axillary dissection, and post-operative radiation therapy.⁴

Which patients of those wanting to save their breast should be selected for the conservative approach? (1) Patients with freely moveable lesions less than 5 cm. in size and not attached to muscle. (2) Patients with no palpable axillary nodes. (3) Patients with average size breast, i.e. not extremely large nor extremely small.

Which patients should be encouraged not to have a lumpectomy, but a modified mastectomy? (1) Obese patients with large fatty breasts. (2) Women over 70 years of age. (3) Women with other medical and mental problems who may not comply with the six week course of radiation therapy. (4) Patients with multiple primaries or multicentric disease in the breast, shown by mammograms or biopsy.^{5, 6}

How should the conservative surgery be carried out? (1) The incision should be immediately over the lesion in the breast and conformed to the curvature of the breast. (2) Two separate incisions should be made for the removal of the tumor and the axillary dissection. (3) If margins are positive, reexcision should be carried out around the primary lesion.^{7, 8} (4) Complete axillary dissections of

* Department of Radiation Oncology, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425-0721 (address correspondence to Dr. Marks).

EARLY BREAST CANCER

levels one and two should be carried out and specifically this should be done in premenopausal women. (5) If a large hematoma exists after the lumpectomy, an alternate plan of treatment should be considered or radiation treatment should be delayed. (6) Quadrantectomy or segmental resection may lead to an inferior cosmetic result; therefore, it may be so inferior to lumpectomy that it not be warranted.

The timing of the post-operative radiation therapy and chemotherapy should be carried out as follows. (1) Radiation therapy should not begin until three or four weeks after surgery to allow for healing of all incisions. (2) Resolution of hematoma formation should be allowed before initiating radiation therapy. (3) Post-operative radiation therapy should be completed prior to the administration of chemotherapy in those patients with positive nodes. (4) Concomitant radiation therapy and chemotherapy should not be carried out and should be discouraged.⁹ (5) All breast tissue should be treated to a minimum dose of 5000 rads and most physicians feel that a boost to the incision and the tumor bed needs to be carried to 6000 rads in six weeks. (6) Node negative patients do not need to have the peripheral lymphatics treated, therefore, patients with an adequate axillary dissection need no radiation therapy to the axilla.¹⁰ (7) Patients with medial quadrant lesions and significant positive axillary lymphadenopathy probably need internal mammary node irradiation.

Transient and intermediate side effects with conservative surgery and radiation as well as long term complications are as follows. (1) Most patients will have an increased pigmentation of the skin in the area receiving 6000 rads. However, this will gradually disappear in approximately one year. (2) Most patients will have an increased awareness or sensation in the treated skin and sometime will manifest rib tenderness. These are not present in modified mastectomy patients because of surgical denervation. (3) Some patients will have fibrosis and thickening of the skin and subcutaneous tissue which may or may not regress with time. (4) A few patients will have arm edema, but in most cases this is due to over aggressive axillary surgery and not radiation, as the axillary contents are rarely included in the radiation therapy port. (5) It is possible to have such complications as rib fracture, fibrosis of the lung, but these are extremely rare with proper tech-

nique and modern equipment. (6) A secondary malignancy developing in the irradiated field is possible but time has not allowed us sufficient follow-up to present an accurate figure of this possibility. The incidence of such a complication increases dramatically when adjuvant radiation therapy and chemotherapy are both utilized. Therefore, it is extremely important to have adequate justification for the use of both modalities after surgical removal of the primary.

What is the expected cure rate with conservative surgery and primary irradiation? Most reported series, including thousands of patients, indicate that clinically Stage I and pathologically Stage I patients can expect a 90 percent or above five-year survival.^{11, 12} Patients who have positive nodes in the axillary dissection and require adjuvant chemotherapy have a five-year survival in the 60 to 70 percent range.¹² Patients with clinical and pathological Stage I have an equal chance of recurring locally in the breast and recurring distally. The chance of salvaging the local recurrent patient with a subsequent mastectomy is excellent and in the range of 70 to 80 percent range at five years.

Patients who are pathologically Stage II seem to have a much higher chance of recurring systemically and the salvage rate is extremely poor. Several contributions to the literature have focused on the cosmetic result from conservative surgery and primary irradiation. In most papers, whether the results are judged by the patient or other physicians, there seems to be an excellent cosmetic outcome in approximately 80 percent of women so treated.

DISCUSSION

This paper is designed to present a simplified overview of the present, generally accepted concept of conservative surgery followed by radiation for early breast cancer. We have tried to point out which patients should and should not be candidates for this approach and how it should be carried out. In addition, the expected outcome and results of such treatment are outlined. It seems that such treatment is now available for all women and in most parts of the world. This type of treatment is also increasing at a rapid rate. Because of this, if the integrity of the method and good results are to be maintained, a uniform and strict policy of acceptance must be adhered to.

EARLY BREAST CANCER

There are several new facets of such treatment and possibilities for the future that need to be mentioned. First, in randomized studies from Asia and Europe involving mastectomy and no radiation compared to conservative surgery and primary irradiation, the long term survival is slightly in favor of the lumpectomy and radiotherapy group.¹³ Obviously, it would take large numbers to show a statistical difference between the groups when the five year survival is in the range of 90 percent. However, this may reflect the fact that radiotherapy is capable of rendering tumor free a larger volume of cancer cells than surgery alone and maybe in such early patients there is a transient period when cells are located in lymph nodes and not disseminated. The implications here are such that in the future we may be able to say that conservative surgery and radiation is more advantageous than mastectomy for other reasons than the cosmetic ones.

Secondly, there are randomized studies now in England and Italy comparing Tamoxifen given for five years versus CMF for premenopausal patients with positive axillary nodes. Preliminary data indicate no survival differences in the two groups.¹⁴ If this ultimately proves to be true, most females would not have to have axillary dissections, but only be placed on Tamoxifen along with post-lumpectomy radiation. This would greatly simplify the surgery needed and also tend to prevent complications such as arm edema and possible second malignancies.

Conservative surgery and radiation has been carried out for decades in Canada and Great Britain as well as in France. It became available in a few centers in this country 15 to 20 years ago and has only been universally accepted recently as an approved method of treatment in breast cancer. Since the early papers by Dr. Hellman and later by Dr. Harris from Boston, a great many facts have been learned about the treatment of early breast cancer and the techniques have been extremely refined. This means that most every pa-

tient with early breast cancer can be treated adequately with safety and excellent results in most of the radiation therapy centers in this country. □

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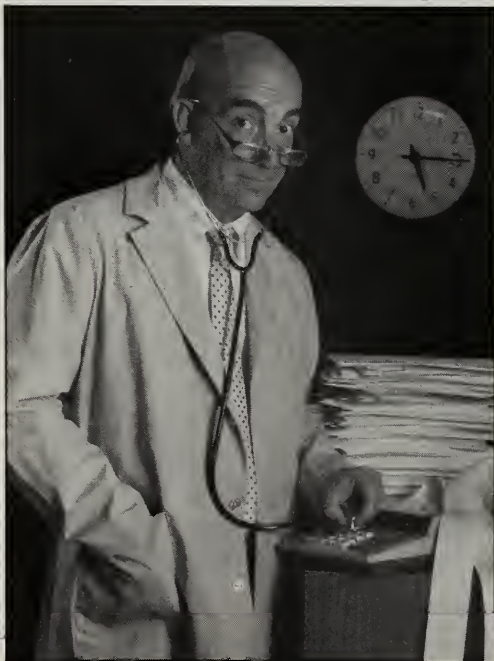
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THE USE OF LITHIUM IN AN OUTPATIENT SETTING*

JOHN W. WALSH, M.D.
MATTHEW E. JOHNSON, M.D.

Ever since Cade, in 1949, reported his experience with lithium for the treatment of affective disorders, it has been a fundamental drug for mental health programs. It has been employed at Catawba Mental Health Center with considerable success. This paper summarizes our experiences with 69 patients we have followed since 1983.

Many patients have begun lithium therapy during a period of hospitalization, usually (but not exclusively) for a bipolar disorder. If Catawba Mental Health Center staff decides that lithium can safely be initiated on an outpatient basis, we do a medical history, physical examination, and baseline laboratory studies, particularly mindful of the following:

Does the patient have hypertension and/or heart disease which might be a problem? (e.g., is he taking a diuretic which could cause troublesome fluctuations in his electrolytes?)

What is the pretreatment weight? (important because weight gain must be watched during therapy.)

What is the daily fluid intake? (polydipsia and polyuria are common from lithium).

Is there evidence for previous or current kidney disease? (blood pressure, fundoscopy, elevated blood creatinine, abnormal urine?)

Is there any thyroid abnormality? (hypothyroidism sometimes occurs during a course of treatment.)

Is there an important hematologic dysfunction? (increased white blood and/or red blood count are occasionally observed during treatment.)

We prefer to stay away from lithium when our patients are on diuretics, although two patients in this series have been managed satisfactorily on the combination. The literature has a number of re-

ports suggesting that hydrochlorothiazide inhibits lithium induced polyuria. Concurrent use of HCTZ and lithium carbonate requires a reduced dose of the latter.

Patients are usually started on one or two 300 mg. tablets or capsules twice daily of lithium carbonate (Li_2CO_3). The first blood lithium is obtained seven to ten days after initiation of therapy. Subsequent daily regimens of 900-1200 mg. are reached in three to four weeks, aiming for a blood lithium level of 0.5-1.0 MEq/L.

Early in the course of therapy, urinalysis and blood lithium are commonly ordered at monthly intervals. As the patient's mental status and therapeutic level of lithium stabilizes, the intervals between laboratory procedures lengthen to three to six months. We try to get TSH and blood creatinine semiannually. In addition, a creatinine clearance may be ordered if indicated.

The use of lithium does not preclude concurrent use of major tranquilizers or antidepressants. They, however, may be reduced or eliminated as the patient responds to lithium.

At each treatment visit the change, if any, in the patient's psychiatric symptoms is noted, as is his mental status. We also watch for increased fluid intake, urinary output, renal abnormalities, thyroid abnormality and edema.

Almost without exception, every lithium patient has an increased fluid intake which they accept without complaint. Careful questioning reveals that they are drinking large amounts of carbonated beverages or iced tea. Some of them have nocturia, getting out of bed two or three times a night. A few patients have reported frequency of urination to be so bothersome that they received a urinary antibiotic from their family physician.

Some patients have gastrointestinal symptoms which lessen when their medication is taken with meals. A coarse hand tremor is not uncommon, and may require small doses of a beta blocker such as Propranolol 20-40 mg. two or three times a day.

In a review of 25 patients who have been on

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LITHIUM THERAPY

lithium for at least two years, we found six (24%) who could not achieve a urine specific gravity of at least 1.025 after overnight water restriction. However, this does not necessarily call for termination of treatment for reasons which will be discussed below.

Three have exhibited clinical findings suggestive of mild renal tubular acidosis with urine pH of 7.0 or more with a lower carbon dioxide content and/or increased blood chloride. Except in one instance, that of a 50-year-old male who has kidney damage from uric acid stones, no patient has developed clearcut signs of permanent renal disease.

In the six patients with probable nephrogenic diabetes insipidus, we studied the hypophyseal-pituitary-renal axis by measuring blood osmolality and antidiuretic hormone (ADH). Only one subject had an osmolality out of the normal range (275-305 m Osm/Kg.) and an ADH level above the accepted 0-9 picograms/ml.

The patient with these abnormal values has an interesting chronology. In 1981, at age 28, he was started on lithium therapy, and for two years his blood level was maintained in the range of 0.6-1.0. We do not have laboratory results from this earlier treatment although we do know that at least one SMA-12 was normal. In March, 1984 he had two urines with specific gravities of 1.010 and 1.014. His bipolar disease being quiescent, the laboratory findings and the fact that he had almost three years impelled us to give him a "drug holiday."

We followed him and he did well for a while. However, mania appeared 14 months after cessation of the lithium and the drug regimen was reinstituted by another physician. At that time his urine specific gravity and blood creatinine were normal. It will be interesting to see if a second episode of nephrogenic DI appears.

In our patient population, recovery from renal abnormalities caused by this therapeutic modality has been the normal. Followup urinalyses, and blood chemistries have been satisfactory. No thyroid complication has been found. One patient developed lithium toxicity from an overdose, and required hospitalization. She recovered.

We give patients a drug holiday because (a) they have improved sufficiently from a psychiatric viewpoint; (b) their renal status is sufficiently abnormal that alternative therapy is indicated; (c) or because of a combination of (a) and (b). On occasion a patient's psychiatric status has dictated the need for Tegretol and/or a neuroleptic and/or an antidepressant.

An interesting observation is that many patients resist termination of their lithium when advised by us, although much time has been devoted to explaining to patients the long term effects of lithium treatment. When it comes time to tell them that they need a new therapeutic agent or a drug holiday, they become fearful. They hark back to their previous acute bipolar episodes and wonder whether emotional difficulties will recur. In addition, some lithium patients who have been told that they need kidney function tests because of low urine specific gravity found in our office heave a sigh of relief when the final results are given to them and they can stay on lithium. When patients must go off the drug, considerable reassurance about their future is necessary, along with a close supervision of the lithium-free period.

SUMMARY

In a preliminary study of psychiatric patients on long term lithium therapy, we have found evidence for nephrogenic diabetes in almost a quarter of them. We have no proof that the changes are permanent. Continued follow-up is planned. □

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111 I. M. A. GRAFTS: THE USE OF THE INTERNAL MAMMARY ARTERY IN MODERN CORONARY ARTERY SURGERY*

L. DIETER VOEGELE, M.D.**
WILLIAM H. PRIOLEAU, JR., M.D.

The superiority of the internal mammary artery as a coronary artery bypass conduit was first proposed by Green in 1968.¹ This development arose from the realization that bypass grafting was only a palliative intervention in the treatment of coronary disease and that, specifically in the case of saphenous vein grafts, attrition due to recurrent atherosclerotic degeneration could compromise 30 to 50 percent of the grafts after a span of seven to ten years.² The demonstration of superior patency capabilities of the I. M. A. over equal or even greater lengths of time, led to its election as the conduit of choice for coronary bypass grafting.³ A strong case for I. M. A. utilization is made for the young patient with an anticipated long survival who has high grade occlusive disease and well-preserved left ventricular function. Survival statistics also seem to indicate that, as long as I. M. A. flow is maintained, regardless of concomitant vein graft patency, survival will be enhanced.⁴

Nevertheless, acceptance has been slow and probably fewer than 20 percent of surgeons try to incorporate I. M. A. grafting in routine revascularizations.⁵ Within our own institution in the past 10 years, utilization of the I. M. A. has increased from about one percent to nearly 40 percent of routine myocardial revascularizations.

MATERIALS AND METHODS

A retrospective analysis of the last 103 consecutive myocardial revascularizations utilizing the I. M. A. was carried out. The mean age was 61 years, ranging from 36 to 74 years of age. More than 90 percent were males. There were 111 I. M. A. graft anastomoses and an additional 227 saphenous vein grafts, representing an average of 3.28 grafts per patient. Eleven patients underwent their second coronary artery bypass operation. There were three emergency operations, one

of which represented a failed percutaneous angioplasty. The preoperative electrocardiogram was abnormal in 90 percent of the patients and 50 percent of them demonstrated segmental wall motion abnormalities (Table 1).

HARVESTING THE I. M. A.

After dividing the sternum, a specifically constructed retractor is positioned to elevate the sternum and expose the internal mammary pedicle. The table is elevated to bring the operating field to eye level and the cautery unit is turned down to a safe level in order to dissect the entire pedicle injury-free. Magnifying loupes and a fiberoptic headlight facilitate the precision that is desirable. Dissection is begun distally and then brought cephalad. The upper end of the dissection requires the most attention because of the proximity of the phrenic nerves medially and of large vessels at the thoracic outlet. Division of the lateral attachments gives the pedicle greater distal reach. Frequently, the entire pedicle can be separated from the pleura without entering it. The I. M. A. pedicle is left in continuity, including the epigastric branches, until it is ready to be used. Systemic heparinization is initiated and the patient subjected to standard operation utilizing car-

Table 1

CLINICAL CHARACTERISTICS OF 103 PATIENTS
UNDERGOING IMA GRAFTING

Mean Age (yrs)	61
Males (%)	91
Unstable Angina (%)	60
Ventricular Dysfunction (%)	50
Emergency Interventions (%)	2.1
Reoperations (%)	10.6

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diopulmonary bypass, potassium cardioplegia, and moderate core cooling. During the ensuing revascularization, five possible uses of the internal mammary arteries can be contemplated: in situ (attached) or free grafts, bilateral conduits amenable to single or sequential anastomoses, including the use of the distal branches in a Y configuration. (Table 2).

RESULTS

Among 103 patients, there were 101 survivors for a total operative mortality of 1.9 percent. Excluding 11 patients undergoing redo operations, the perioperative mortality was 1.08 percent. However, mortality among reoperation patients was 9.1 percent (one of 11 patients). A total of 111 I. M. A. anastomoses were constructed and an additional 227 reversed saphenous vein anastomoses placed for an average of 3.28 bypasses per patient. Three patients were operated upon urgently. Five patients, or 4.8 percent, required mediastinal exploration for bleeding. Although perioperative myocardial infarction may be dependent on defining criteria, four patients or 3.8 percent suffered unequivocal infarcts in the perioperative period, one of which was 48 hours post-bypass. Six patients required intra-aortic balloon support. There were no sternal wound infections and only one unstable sternum in a patient with chronic pulmonary disease. No patients suffered neurologic complications, although several patients manifested early phrenic nerve dysfunction, not all of which were either clinically significant or specifically documented. In our experience, these may be mostly related to temperature gradients near the phrenic nerve when instituting myocardial cooling, and function can be expected to return in several months.

DISCUSSION

Palliation of atherosclerotic coronary occlusive disease depends upon the maintenance of patent grafts over prolonged periods of time and in the face of continuing disease formation. The propensity of saphenous vein grafts to develop not only intimal hyperplasia but also atheromatous wall disease leads to their gradually diminishing patency over longer periods of observation.³ On the other hand, the superiority of the in situ I. M. A. in terms of increased patency has become widely appreciated and documented in many studies.³

Table 2

VARIATIONS OF UTILIZATION OF IMA

In situ or proximal attachment

Bilateral

Sequential

Y-configuration

Free Graft

Furthermore, a number of publications describe not only superior patency results but also prolonged survival in patients receiving internal mammary grafts.^{4, 6} Thus, the use of the I. M. A. graft within the past decade has evolved from a role of substitute bypass (when no saphenous vein graft might be available) to that of conduit of choice. Currently, we utilize the I. M. A. in 30 to 40 percent of patients. The superiority of the internal mammary artery as a bypass conduit rests on several factors, one of which is probably the basic physiologic nature of the living artery and its pedicle, preserving the artery's capability to regulate its flow. This has been termed autoregulation.⁷

Nevertheless, acceptance among surgeons has been slow. Use of the I. M. A. is technically more demanding, requires more time for preparation, and its use is ultimately controlled by a relatively flexible set of contraindications (Table 4) which include unequal blood pressures in the arms, emphysema of the lungs, emergency operations, long-standing total occlusion of a coronary artery to a dyskinetic myocardial segment, or a non-critical occlusion of a vessel, as well as ultimately the relative age of the patient and his expected longevity. In addition, the overlying chest wall must have an uncompromised blood supply. Future studies need to establish superior patency and survival through each individual coronary artery territory, in particular involving sequential anastomoses or divided internal mammary arteries. The autoregulation phenomenon and its relationship to the prostaglandin-prostacyclin system may represent a gradual accommodation of size to

INTERNAL MAMMARY GRAFTS

Table 3

CLINICAL RESULTS OF 103 IMA GRAFTS

IMA Anastomoses	111
Total Anastomoses Per Patient	3.28
Overall Operative Mortality	1.9%
First-time Operation Mortality	1.08%
Redo - CABG Mortality	9.1%
IABP Support	6
Perioperative Infarction	4
Mediastinal Bleeding	5
Mediastinal Infection	0
Sternal Instability	1
CNS Deficit	0
Phrenic Nerve Dysfunction	6

flow and may not be able to satisfy immediate needs, depending on runoff impedance.⁸ However, particularly for the physiologically young patient, the overriding indication has developed to use the I. M. A. whenever clinical and anatomic conditions are judged suitable. This arterial bypass conduit leads to a greater than 90 percent patency at 12 to 15 years.

SUMMARY

Use of I. M. A., which has been increasing in recent years because of superior patency rates and prolonged survival, affords us with a means to palliate the ravages of coronary disease more successfully than ever before. This study reviews 111

Table 4

RELATIVE CONTRAINDICATIONS TO IMA USE

Emergency operation
Totally occluded vessel in akinetic muscle
Less than critically occluded recipient artery
Advanced age
Severe emphysema
Prior chest wall or mediastinal irradiation

I. M. A. graft anastomoses in 103 patients and evaluates the resultant morbidity and mortality in this group of patients. □

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FROM AFRICA TO SOUTH CAROLINA: A BRIEF REVIEW OF THE CONTRIBUTIONS OF AFRICANS AND AFRICAN-AMERICANS TO MEDICINE

BURNETT W. GALLMAN, M.D.*

Despite scattered and anecdotal information in the traditional and mainstream medical literature, there is a growing body of data concerning the contribution of Blacks to medicine.¹⁻⁴ There is a paucity, however, of information dealing with the contribution of Blacks to medicine in South Carolina.

There is an acknowledged shortage of Black physicians in the United States.²⁻⁵ Newsome has proposed that knowledge of Black accomplishments (African as well as African-American) in medicine would increase the interest of young African-American students in medicine and would also increase their confidence in their ability to study medicine.²

Even though the concept of "Black History Month" may seem exquisitely redundant (as well as academically and ethically unnecessary), it is, unfortunately and realistically, not redundant and very necessary. In the spirit of "Black History Month" then, this brief overview is being offered in the hopes of acquainting South Carolina physicians with the role Blacks have played in medicine throughout time and especially in South Carolina.

PART ONE—AFRICAN ORIGINS

The earliest system of medicine known to man comes from the African nation called Kmt (the Black Land or Land of the Blacks or The Black Community)—now known as Egypt. That the ancient Egyptians were Black has been documented by many sources, including Herodotus, the "Father of History." The historian Manetho stated that Narmer (Menes), the Upper (Southern) Egyptian King who is commonly credited with uniting Upper and Lower (Northern) Egypt, had a son called Athothis, who practiced medicine and wrote books on anatomy.² These books have never

been found but if found would make Athothis one of the earliest known physicians.

Imhotep, however, the world's first known "Renaissance Man" or multigenius, was "the first figure of a physician to stand out clearly from the mists of antiquity," according to Sir William Osler. Imhotep was chief physician to the Pharaoh Zoser (of the Third Dynasty), sage and scribe, chief lector priest, astronomer, architect (he is said to have designed and built the step pyramids at Saqqara), and poet (he is said to have coined the phrase "Eat, drink and be merry, for tomorrow we die."). The Greeks later identified him with their god of healing, Aesclepius. Homer said in *The Odyssey* that the Egyptians were more skilled in medicine than any of humankind. Rogers stated that the Greeks sent their young men to be educated in Egypt as today Egyptian students go to Europe for their education.⁶

Medicine as it was practiced in Egypt was a mixture of science, magic (spirituality) and religion.¹ This act has caused many writers to state that the basis of Egyptian medicine was largely empirical and magical; however, the extant medical papyri demonstrate that the medical knowledge of these Black people was theoretical as well as empiric.

The Edwin Smith papyrus was a very organized and systematic surgical textbook that revealed not only a knowledge of surgery and surgical anatomy but also surgical techniques that are still used today in some form.^{3, 7} They were also aware of cardiovascular physiology.¹

The Kahun papyrus deals with veterinary medicine and women's diseases.⁷

The Georg Ebers papyrus is a medical therapeutic text that deals with pharmacologic, mechanical and magical forms of therapy.⁷ It contains chapters on intestinal disease, helminthiasis, ophthalmology, dermatology, obstet-

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CONTRIBUTION OF BLACKS

rics and gynecology, pregnancy diagnosis, contraception, cardiology, gastroenterology, and otolaryngology. There were more than 700 specific remedies in the materia medica of this papyrus.⁷

The Chester Beatty papyrus deals with treatment of diseases of the anus.⁷

The Hearst, London and Berlin papyri are believed to be practical handbooks rather than textbooks.⁷

As the above topics suggest, the ancient Egyptians had a system of specialization not unlike today.^{1, 2, 3} Also worth mentioning here is the fact that all Egyptian citizens had access to medical care. There was a type of socialized medicine in force in ancient Egypt.³

From Egypt, the flow of knowledge moved northward into Asia and Europe and southward into the African interior. Hippocrates and Galen both continued what had originated in Africa—minus the emphasis on religion and spirituality (or magic).²

Africans had developed the concepts of quarantine for contagious diseases and had been using a vaccination technique against smallpox for centuries before Jenner made his “discovery.”

In 1879, a European missionary doctor observed an elective Caesarean section in Uganda that was performed by an African surgeon.^{1, 3} The concepts used were the same as used today—anesthesia, restraints, sterilization of skin and utensils, coagulation using heat, etc. This was performed before elective Caesarean sections were done routinely in Europe.

UNITED STATES

From the previous discussion, it is obvious that many slaves brought with them to America a knowledge of healing that was frequently misunderstood by the European colonists (who usually deemed it inferior because they didn't understand it). A good example of this is the vaccination technique for smallpox described above (called “buying the smallpox”) that was introduced to Cotton Mather by his slave Onessimus in 1721 during an epidemic of the disease.^{4, 8} Mather wrote to ten physicians in Boston concerning this technique and only one responded—Dr. Zabdiel Boylston—who tried it on his own son and later lectured in Europe about this technique.⁸ Although inoculation worked well, religious leaders

opposed it, stating that it was a heathen practice and Christians should not learn from the heathen.⁸ Medical historians, unfortunately, do not mention Onessimus, although adequate documentation exists that this African introduced inoculation to European Americans decades before Jenner.⁴

From the brief discussion of extant medical papyri, it is obvious that Africans were extremely knowledgeable of the medicinal properties of many minerals, herbs, plants and roots.^{1, 3} These herbal or “root” doctors gained respectability and frequently were the prominent healers (for Black and White patients) on many Southern plantations. Many slave women also acted as midwives for Black and White patients.

Many individual Black physicians have distinguished themselves (Table 1).

The first Black medical society or association was the Medico-Chirurgical Society of the District of Columbia. It was organized in 1884 after these Black doctors were refused membership in the American Medical Association.^{4, 9}

The National Medical Association was founded in Atlanta in 1895 during the Cotton States Exposition. Mr. Miles V. Lynk (see Table 1) had suggested a national organization of Black physicians in an editorial in *The Medical and Surgical Observer* (which was the first Black medical journal). The organizational meeting was held at the First Congregational Church of Atlanta and Dr. R. F. Boyd of Nashville was elected the first president.^{4, 9}

There were several Black medical schools organized because the reigning racism prevented most schools from accepting Black students in sufficient numbers—a situation very similar to that of today (see Table 2).

For much the same reason, Blacks were forced to create their own hospitals. Black physicians were not allowed to practice in most White hospitals and had been forced to practice in or near Black medical schools. As these were shut down, Black hospitals multiplied because of community need.⁹ By the same token, Black patients were either denied admission to White hospitals or given substandard rooms in segregated wings.

Examples of some of these Black hospitals were Flint-Goodrich in New Orleans; Community Hospital in Norfolk, Virginia; Provident Hospital in Chicago; Douglass Hospital in Philadelphia; Lincoln Hospital in Durham, North Carolina; and the

TABLE 1

SOME PROMINENT BLACK PHYSICIANS IN AMERICAN MEDICINE

Lucas Santomee: First African physician in the colonies. Educated in Holland.
James McCune Smith: Probably the first Black American to obtain a medical degree. Abolitionist and editor. Medical degree from the University of Glasgow in Scotland.
Bishop Absolom Jones and Bishop Richard Allen: Leaders of the African Society of Philadelphia during the yellow fever epidemic of 1793, whose members functioned as the Red Cross of the day when others fled the city.
David John Peck: First Black American to receive an M.D. degree from an American medical school (Rush Medical College, Chicago, 1841).
James Derham: Former slave who became well respected by peers, including Dr. Benjamin Rush. Had worked as an assistant to three physicians.
Rebecca Lee: First Black American woman to receive the M.D. degree (New England Female College, Boston, 1864).
William Wells Brown: Foreign war correspondent, author, abolitionist and wrote the first known novel by a Black man.
Alexander T. Augusta: First Black physician to be a surgeon in the U. S. Army and to head a hospital in the United States (Freedmen's Hospital, Washington, D. C.). Only Black on Howard University's faculty.
David K. McDonough: Educated as a result of argument between his "owner" and another slaveholder regarding the innate mental capacity of Blacks, e.g. the movie "Trading Places." Became a leading consultant in New York.
Daniel Hale Williams: Second surgeon known to perform a successful operation on the heart; he knew nothing of the first operation when he performed his surgery. Founded Provident Hospital (Chicago) and the first nursing school for Blacks; a founder of the National Medical Association.
Miles Vandahurst Lynk: Medical school founder; publisher of first Black medical journal in the United States.
Martin Delaney: Abolitionist, newspaper editor, public health worker, Army officer, agent on the "Underground Railroad."
Charles R. Drew: Originated techniques to dry and store blood plasma, which saved thousands of lives during WWII. Director of the first American Red Cross blood bank.
William Augustus Hinton: Designed test for syphilis. First Black professor at Harvard.
Further information is available upon request from the author.

Columbia, South Carolina Hospitals: Good Samaritan, Waverly, Benedict and St. Luke. Community Hospital in Kingstree was also a Black hospital.

SOUTH CAROLINA

Mention of Black physicians in South Carolina is scattered in many references—none in any great degree of depth.

One of the earliest mentions of a Black in medicine in South Carolina was in the *South Carolina Gazette*, a Charleston newspaper, on February 25, 1751.⁹ Cesar, a Black practitioner, had been given his freedom by the General Assembly of South Carolina because of his discovery of a remedy to cure a rattlesnake bite and had been granted an annual stipend of one hundred pounds sterling.⁹ The newspaper was ordered to publish the prescription for the benefit of the general

public.⁹ This cure was published widely outside of South Carolina. In 1789, it was published in Philadelphia and in 1792 it was published in the *Massachusetts Magazine*.

The *Charleston City Gazette and Daily Advertiser* of June 22, 1797 carried this advertisement regarding a runaway slave: "He passes for a doctor among people of his color and it is supposed practices in that capacity about town."⁹

Wilcie Elfe was a Black pharmacist of Charleston whose prescription book, dated 1853, showed that he was the creator of many drug recipes. His "owner" was a drunkard who trained him. Elfe created a large number of patent drugs that were sold throughout South Carolina.

Dr. Rebecca Cole, the second known Black woman to graduate from a medical school in the United States (she graduated from Women's Medical College of Philadelphia, Pennsylvania in

CONTRIBUTION OF BLACKS

TABLE 2

BLACK MEDICAL SCHOOLS* †

Howard University Medical School, Washington, D. C. (1868-). The founders had all been Union Army officers.
Meharry Medical College, Nashville, Tennessee (1876-). Originally the Medical Department of Central Tennessee College.
Leonard (Shaw) Medical School, Raleigh, North Carolina (1882-1915). First American medical school to have a four year graded curriculum.
Louisville National Medical College, Louisville, Kentucky (1887-1911).
Flint Medical College, New Orleans, Louisiana (1889-1911).
Knoxville Medical College, Knoxville, Tennessee (1895-1910).
The Medical Department of the University of West Tennessee (1900-1923).
Chattanooga National Medical College, Chattanooga, Tennessee (c. 1902-1904).
Lincoln University Medical School (Lincoln University, Pennsylvania) (1870-1876). Existed on paper from 1870 to 1876 but never had any students.

* There are two predominantly Black medical colleges that were founded in the modern era: Martin Luther King in Los Angeles and Morehouse Medical College in Atlanta which are not dealt with in the text of this paper.

† Savitt¹⁸ mentions four additional Black medical colleges that are not mentioned in other references: 1. Straight University (New Orleans, 1873-1874); 2. State University Medical Department (Louisville, 1899-1903)—said to have merged with Louisville National Medical College; 3. Hannibal Medical College of Memphis (1889-1896), and 4. Medico-Chirurgical and Theological College of Christ's Institution (Baltimore, 1900-?).

Further information available upon request from the author.

1867) is said to have practiced in South Carolina (as well as Philadelphia and Washington, D. C.).^{10, 11}

Dr. Lucy Manetta Hughes, born in North Carolina in 1863, received her M.D. degree in 1894 from the Women's Medical College of Pennsylvania.¹² She moved to Charleston in 1896 where she was given a temporary license to practice medicine.¹² She was well respected by her peers in South Carolina (Black and White).¹² She established the Cannon Hospital and Training School and was thought to have been the only Black

* Records at the Waring Historical Library in Charleston show the spelling of this name as A. C. McClennan.

woman physician practicing in South Carolina at that time.¹² She died on June 26, 1911.¹²

There were three Black physicians in Charleston in 1890: Drs. William Demosthenes Crum, A. C. McClellan,^{*} and William Henry Johnson¹³ (see Table 3). Dr. McClellan founded the Charleston Training School for Colored Nurses in 1897. L. Hughes Brown, a Women's Medical College of Philadelphia graduate, was head of the branch of obstetrical nursing in the school (she was the wife of a Black Presbyterian minister).¹³

There were three Black physicians in Columbia at the end of the century: Drs. C. C. Johnson, C. L. Walton and Matilda Arabelle Evans (see Table 3).¹³

In 1896, Dr. C. C. Johnson spearheaded an organization of professional Blacks (physicians, dentists and pharmacists) along with Drs. R. Levy of Florence, L. A. Earle of Anderson and A. C. McClennan of Charleston. The organization was called the Palmetto Medical, Dental and Pharmaceutical Association. The "Palmetto" was originally split into three sections—the Piedmont, the Pee Dee and the Congaree but now there are four sections: the Piedmont, the Congaree, the Charleston County and the Inter-County.¹³

There have been many Black individuals from South Carolina who have become physicians and practiced elsewhere. The 1906 graduating class of the Leonard Medical School of Shaw University in Raleigh, North Carolina, had at least two South Carolina natives: Dr. B. C. Sharpe, a Seneca native who practiced in Seneca for many years, was one. The other was Dr. Newton Alexander Doyle, also an Oconee County native, who practiced in Gainesville, Georgia, for many years. Dr. Doyle, grandfather of this author, followed a course common to Black physicians of that era—he worked during school and between terms and actually practiced medicine prior to his graduation in order to earn money (he also worked on the Southern railroad).

The Meharry Class of 1917 had five South Carolina natives in it. The earliest known South Carolina native who graduated from Meharry was John McP. Thompson of Charleston, who was in the Class of 1889. The Class of 1893 included Asbury B. McTeer of St. George and the Class of 1894 included Daniel Mooror of Orangeburg.

The practice of medicine in South Carolina for Black physicians has been historically difficult at

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TABLE 3

SOME PROMINENT BLACK SOUTH CAROLINA PHYSICIANS*

- William Demosthenes Crum, William Henry Johnson, and Joseph A. Robinson: Charleston natives who graduated from Howard and became prominent practitioners.
- A. C. McClellan: Founded the Charleston Training School for Colored Nurses (1897); a founder of the Palmetto Medical, Dental and Pharmaceutical Association.
- Matilda Arabelle Evans: An Aiken County native who organized a nurse's training school which grew into St. Luke Hospital in Columbia.
- C. C. Johnson: A Columbia native who practiced in Aiken; a founder of the Palmetto Medical, Dental and Pharmaceutical Association.
- R. Levy: A Florence physician who was a founder of the Palmetto Medical, Dental and Pharmaceutical Association.
- L. A. Earle: An Anderson physician who was a founder of the Palmetto Medical, Dental and Pharmaceutical Association.
- Carrol M. Leevy: A Columbia native who is Professor of Medicine at the New Jersey College of Medicine and Dentistry and an internationally known authority on liver disease.
- Gwendolyn V. Brownlee Nash: A Camden native who was Assistant Professor of Cardiorenal research at Howard University.
- W. H. (Bubba) Young: An Anderson physician who has participated prominently in the Palmetto Medical, Dental, and Pharmaceutical Association.

* All of the above-named persons received the M.D. degree. A Ph.D. who should be mentioned is Ernest Everett Just, a Charleston native who published more than 50 papers on fertilization and experimental parthenogenesis of marine eggs.

Further information available upon request by the author.

best. However, despite exclusion from the American Medical Association and its state and county affiliates, and inability to practice in most hospitals and even inability to take review courses, the South Carolina Black physicians established one of the best yearly conferences in the country.¹⁵ Every year, the yearly meetings of the "Palmetto" attracted the finest minds in medicine in the country. Because the situation in most other states was no better, there were usually many visitors from throughout the East Coast. Many renowned academicians considered an invitation to the yearly Palmetto meeting an honor. Because segregated facilities prevented these meetings from being held at hotels, they were held at Black schools, Black hospitals and Black churches. Out-of-town participants and visitors usually stayed at the homes of friends or friends of friends.

The census of 1890 counted 30 Black physicians in South Carolina¹⁶ and the "Palmetto" figures in 1912 indicated a membership of 60. In 1920, the minutes of the State meeting (held in Sumter) listed 73 physicians, 22 dentists and 17 pharmacists. In 1943, there were 49 physicians, 30

dentists and 11 pharmacists. In 1952, there were 55 physicians, 38 dentists and 10 pharmacists. In 1975, there were 38 physicians, 42 dentists and 13 pharmacists. In 1986, there were 100 physicians, 45 dentists and 21 pharmacists.

CONCLUSION

This has been a brief overview of Black contributions to medicine. Much of this information has been scattered. Griffin and Costello established a need for more Black physicians in South Carolina.¹⁷ They did not establish reasons for the shortage, although they did touch on some reasons in their recommendations. I tend to agree with Newsome's proposal that by making knowledge of Black accomplishments readily available to young Black students, there would be an increased interest in the pursuit of medicine as a career. There is also the consideration that the years of negative reinforcement aimed at young Black minds could be reversed and even undone.

There is also the need for this historical knowledge to be made available to the medical and lay public at large in order to correct misconceptions

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TABLE 4

PAST PRESIDENTS OF THE PALMETTO MEDICAL, DENTAL, AND PHARMACEUTICAL ASSOCIATION

1912	C. H. S. Henderson	1938	W. D. Chappelle	1964	L. P. Chappelle
1913	G. W. Harry	1939	E. C. Jones	1965	J. M. Douglas
1914	C. W. Maxwell	1940	U. G. Teele	1966	G. T. Cherry
1915	J. P. Pickett	1941	L. W. Long	1967	C. L. Stephens
1916	A. E. Boyd	1942	W. H. Young	1968	J. E. Brown
1917	J. A. Maxwell	1943	A. B. Johnson	1969	N. Cooper
1918	F. Johnson	1944	B. A. Everett	1970	H. D. Monteith
1919	N. A. Jenkins	1945	No meeting	1971	E. M. McDonald
1920	J. G. Goodwin	1946	D. M. Duckett	1972	D. W. Wilson
1921	M. A. Evans	1947	D. K. Jenkins	1973	C. O. Spann
1922	W. M. Thorne	1948	J. J. Clinton	1974	H. Goggins
1923		1949	W. W. Jones	1975	S. C. Disher
1924	J. H. Thomas	1950	H. E. Thomas	1976	L. J. Rosemond
1925	J. G. Stuart	1951	E. W. Nance	1977	W. F. Hickson
1926	S. R. Green	1952	T. C. McFall	1978	A. L. Reid
1927	A. J. Collins	1953	W. R. Laney	1979	J. A. Boykin
1928	J. S. Allen	1954	C. E. Morgan	1980	H. Hill
1929	R. J. Wilson	1955	E. C. McPherson	1981	A. A. Martin
1930	E. B. Burroughs	1956	D. Counts	1982	E. W. Lilliewood
1931	E. A. E. Huggins	1957	J. G. Douglas	1983	P. Everett
1932	R. K. Gordon	1958	T. M. Cottrey	1984	P. Gadebuku
1933	L. M. Daniels	1959	W. S. Thompson	1985	M. Jamison
1934	L. M. Daniels	1960	F. G. Jenkins	1986	P. Gadebuku
1935	T. H. Best	1961	S. J. McDonald	1987	R. Gordon
1936	D. J. Dillon	1962	I. M. Tompkins		
1937	H. U. Seabrook	1963	H. E. Caldwell		

Further information is available upon request from the author.

that have often fueled prejudice and even hatred.

Hopefully, this paper will stimulate additional research so that the issues and events dealt with here can be presented in greater detail and made available to students at all levels.

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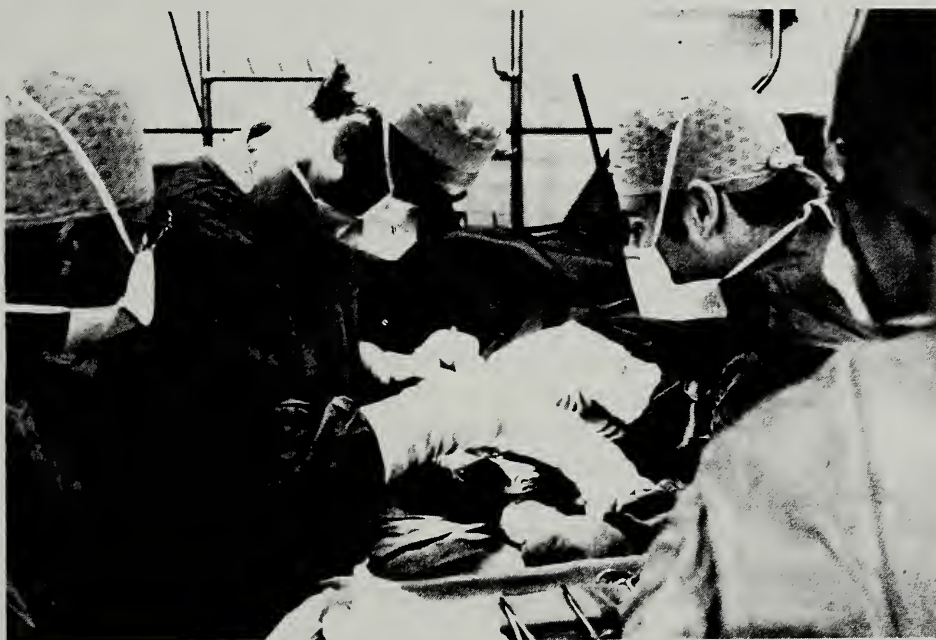
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Editorial

BLACK PHYSICIANS, SOUTH CAROLINA MEDICINE, AND THE SCMA

Sullivan's Island evokes many memories, mostly pleasant. The dominant fragrance is usually that of July afternoons on the beach. The quaint street names remind us of the old trolley line. The history-minded recall the fortifications that once guarded Charleston Harbor, while the literary turn to Edgar Allen Poe's "The Gold Bug." To black Americans, memories are—or perhaps *should* be—less pleasant. It was there that untold thousands of slaves were quarantined before being carted off to the auctions. Peter H. Wood points out that Sullivan's Island "might well be viewed as the Ellis Island of black Americans," since "the colonial ancestors of present-day Afro-Americans are more likely to have first confronted North America at Charlestown than at any other port of entry."¹ Alone among American immigrants, they did not come voluntarily, seeking a better way of life.

More than any other issue, race relations *define* the history of South Carolina. It is hard to imagine a competent historian, sociologist, or anthropologist starting elsewhere. Plantation slavery once dominated our economy to a truly phenomenal extent, especially in the lowcountry. In Georgetown County—as an extreme example—85 percent of the population at the outbreak of the Civil War were slaves. The theory that the war was *not* fought over slavery is no longer tenable. South Carolina's fervor to secede prompted a long, bitter Federal occupation. Not long after the troops pulled out, white populism arose to quell whatever chances there might have been for peaceful cooperation. Finally and more recently, the relative ease with which desegregation came about in South Carolina won praise from many quarters. Race relations provide a litmus test for measuring how just about any generation of South Carolinians responded to just about any issue. One need not talk about it openly. The problem is *there*.

All previous editors of *The Journal* have had an interest in history. Given the primacy of race

relations to our history, one would anticipate that many articles and editorials would have discussed this issue over the years. This does not seem to have been the case. As best I can tell, the special problems of black physicians had not been the subject of a single article or editorial prior to the present issue. In this issue of *The Journal*, Dr. Burnett Gallman rectifies this situation with what he calls a "brief overview." He recognizes that much more remains to be done. Likewise, I recognize that I cannot do justice to the subject's complexities in one editorial. However, several aspects

Dr. Gallman notes with understatement that "the practice of medicine in South Carolina for Black physicians has been historically difficult at best." After the long years of college, medical school, and residency, blacks historically faced almost insurmountable barriers. Their denial to membership in county, state, and national medical associations was bad enough. Worse was their denial of hospital privileges. This forced well-qualified black physicians to surrender their patients at the hospital door. All too often, white physicians stole away those patients who were able to pay. Black physicians were left to care for large numbers of indigents. Records document that many of these physicians re-located to the North. Others continued in practice partly out of a sense of obligation. Many burned out early. A common expression of the weary black physician to the younger colleague was: "I've paid my dues."

The lives of South Carolina black physicians who endured these hardships deserve more adequate recognition. Consider, for example, Matilda Evans of Columbia. Three times between 1898 and 1916, she attempted to open hospitals against all odds. Consider L. W. Long of Union. In the early 1930s, he opened a community hospital, started an annual program of post-graduate clinics for black physicians, and at his own ex-

pense started a program of preventive health services for black school children. Edward H. Beardsley points out that this was ironically beneficial to white children also: "Realizing that black schools were getting something that theirs were not, Union whites became very uncomfortable and began to press for a public health center (where formerly they had opposed it) so that they could enjoy similar services and reestablish their racial pre-eminence."²

Adding to black physicians' problems were their small numbers. In 1890, there was one black physician per 23,000 citizens in South Carolina (compared to one per 420 citizens for whites). By 1920, there was one per 10,200 citizens (compared to one per 651 citizens for whites). Blacks not only found it difficult to obtain medical education but also found it difficult to get started in practice. Todd L. Savitt identifies several problems: (1) blacks were distrustful of black physicians after years of conditioning by white physicians; (2) black patients would often take advantage of black physicians' good will when it came time to pay their bills; (3) occasional well-entrenched black physicians were perceived as incompetent and would undermine the standing of other black physicians; and (4) root doctors and other unorthodox practitioners would undermine black patients' trust in their own physicians.³ Looking back, it is amazing that blacks went into medicine at all.

In theory, ours should be a time of rapid social change. Medical schools no longer discriminate. Medical staffs are open. Medical societies welcome new members. Overt prejudice has largely disappeared from polite conversation. However, it would be naive to opine that all wounds are healed. We in South Carolina can take comfort only in the observation that the problems are now recognized to be *national*, not just local or regional. The great expectations spawned by *Brown v. Board of Education* have simply not happened. Allan Bloom of the University of Chicago, in his recent bestseller, writes pessimistically of the college scene:

White and black students do not in general become friends . . . the gulf of difference has proved unbridgeable. The forgetting of race in the university, which was predicted and

confidently expected when the barriers were let down, has not occurred. . . . The programmatic brotherhood of the sixties did not culminate in integration but veered off toward black separation.⁴

By necessity, blacks have long had their own medical societies (the National Medical Association and in South Carolina, the Palmetto Medical, Dental, and Pharmaceutical Association and others). I shall now pose two questions. First, why do black physicians need the SCMA? Second, why does the SCMA need black physicians?

The answer to the second question comes easier. The SCMA needs *all* South Carolina physicians. The medical profession, from time to time, must stand *unified* to be effective. We need to serve the best interests of *all* South Carolinians to retain our credibility. The answer to the first question is much less straightforward. In the other traditional professions—the ministry and the law—blacks have achieved great prominence in our state. This has not been the case in organized medicine. The first black physician has yet to serve on the SCMA Board of Trustees. Given the competing priorities for their time, why should black physicians bother to become involved in the SCMA?

As individuals, we should and must remain ever-sensitive to the subtle damages wrought by years of injustice. As an organization, we should encourage not only participation but also leadership among all identifiable sub-groups of physicians. We *must* do this if we are to be credible where it counts. That some differences may never completely disappear, at least not during our own lifetimes, is no reason not to try . . . no reason why the SCMA cannot stand among those in the forefront who seek to make things better for those to follow.

—CSB

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ON THE COVER: EDWARD FRANCIS DARBY, M.D.

White coats do not a physician make, nor does an alphabet soup of credentials behind a name constitute the cherished and honored right of an individual to practice medicine. Credentials committees and hospitals, and hospital Boards of Directors, are facing more and more challenge by non-physician "providers" of care in our traditional medical settings. Edward Francis Darby, M.D., recognized trends and needs within the medical profession many years ago, and his address to fellow physicians when he was inaugurated President of the South Carolina Medical Association in 1904, attests to his insight.

Dr. Darby was born February 24, 1860, and died in 1906. His early education was at the Holy Communion Institute in Charleston and later at Virginia Military Academy. His medical training was under the preceptorships of Dr. B. W. Taylor and Dr. A. N. Talley of Columbia, South Carolina. He attended the Medical College of the State of South Carolina in Charleston, did secondary training at the Hospital College of Medicine in Louisville, Kentucky and graduated from the University of Maryland Medical School in 1884. He also took postgraduate training at Johns Hopkins Medical School. His medical career was practiced in the towns of Lynchburg and Magnolia, South Carolina, where he began his practice in 1884. As a member of the SCMA, Dr. Darby served his profession admirably and served his tenure as President of the association several years before his death. He died at his home in Lynchburg, South Carolina, February 9, 1906, after a short illness.

In his address before the members of the SCMA, Dr. Darby directed his remarks to the subject of proper medical training for aspiring to the privileged position of providing fellow humans with quality and appropriate medical services. He attributed the South Carolina Medical Association as being a prime factor in successfully operating a climate in which medical education in South Carolina was instrumental in making the character of South Carolina physicians honored and respected. He stated it had done so "without appearing to control, and without imposing any other restraints upon its members than such as commend them to the understanding and the

conscience of every enlightened individual," the results being that the character of the physicians would be honored and respected by the laity throughout the state.

Dr. Darby stated that "the proper steps for every young (physician), as he leaves his Alma Mater and begins the practice of medicine, is to connect himself with his county society and then with the State Association; for no man can know precisely the measure of his own ability; his estimate may be, and no doubt sometimes is, correct; but when it is so, it is purely accidental, hence it is that, for the most part, men of education are divided into two great classes: those who are distrustful of their powers, and those whom vanity prompts to overrate them. Literary and scientific association, by bringing various degrees of talent together enables the possessors by attrition to correct that false estimate which their timidity or their confidence had formed, by showing them in relation; and the emulation of the young aspirant after distinction is so disciplined by the comparisons thus frequently instituted between himself and others, that assurance on the one hand and modesty on the other, are made to give place to a well tempered confidence, which is neither inefficient through fear nor offensive through arrogance."

Dr. Darby was instrumental in moving toward the adoption of a course of medical study consisting of four years, as is now the norm.

Referring to the duty of the physician he stated that "To be well equipped for his profession is not only his duty, but his deficiency is his sin, his ignorance is his crime. He is not only obliged to administer relief but the relief must be extended in the best and speediest manner and with the least possible suffering. And if anything can render the duty still more arduous, it is the conviction that his feelings must be so disciplined by his judgment as in no case to be permitted to control it. It is his exclusive business to shield his patients from dangers and assuage the pains of disease, to furnish the means which alone can give to life its enjoyment, or mitigate the sufferings which must inevitably terminate in death; and to give additional force to all those responsibilities, there are

no human sanctions to enforce the obligation. Only God and his conscience can estimate his deficiencies or rebuke his neglect. How important, then, how vitally interesting to the public, is the subject of medical education! And how essential it is that its foundation should be laid in a deep and abiding sense of moral obligation!"

Dr. Darby asserted that "a medical reputation which in years gone by might have been easily acquired, must now be maintained by severe application to study and industrious habits of observation; and those who fail in either, or who content themselves with their attainments, betray not only neglect of the progressive improvements of the science, but a contempt for the intelligence of the public, which will not fail of its desert, whenever their claims to distinction are questioned. It is necessary, therefore," Dr. Darby stressed, "that those who devote themselves to the practice of medicine, should be fully educated, in order to warrant the expectation of acquiring character in their profession; and, as an indirect stimulus to their exertions, they should be made acquainted with the difficulties which lie in their way, that they may not, in disgust, when too late to retrace their steps, abandon the high road to honorable preferment, and study to compensate themselves for their disappointment, by converting the privileges they possess into mere tradestock to accumulate wealth."

Medicine and the title of Physician still enjoy a respect in our western world that few others achieve. It is purely through the past history and performance of the many excellent men and

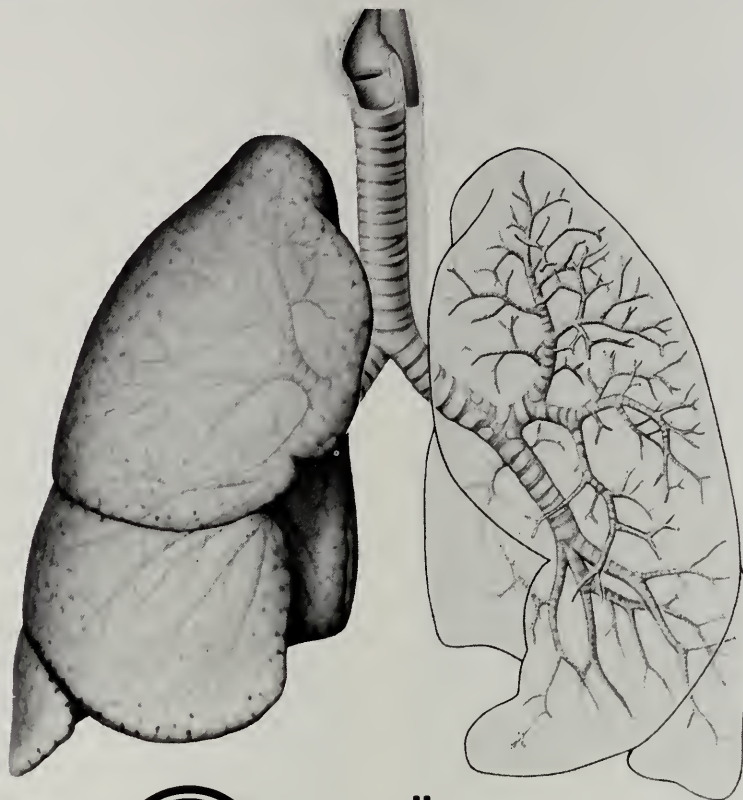
women who devoted their lives to the care of suffering humans that society now assumes the title of Doctor, without regard to who confers such a title, signifies that the holder is worthy to ride on the coattails of medicine.

Dr. Darby pointed ahead when, in 1904, he noted that "if the obligations of the physician are so numerous, and the confidence of the public, so liable to be misplaced; if the difficulties he must encounter are so great, and his incentives to exertion, so small; if the temptations to neglect the great end of his vocation are so strong, and the restraints which the law imposes, so weak—it becomes our duty, so far as it is in our power, to correct this deceptive estimate of character, and to cherish the talents which adorn, and the morals which alone can give true dignity to the profession; while, at the same time, we guard with increasing vigilance every avenue by which unworthy persons may enter and possess themselves of its privileges. We are constituted by law the guardians of the public interest, in so far as these interests can be affected by medical education; and to what extent such responsibility reaches, I almost fear to say: — Let conscience answer."

Dr. Darby passed from the medical scene in 1906. One hopes that his strong sense of duty and responsibility is still among the physicians of our community who must attempt to restrain the legislative mandates which daily seem to make ineffectual the efforts that two centuries of physicians have designed to protect the public wellbeing.

—THOMAS M. LELAND, M.D., Ph.D.

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Note: Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Indications: Lower respiratory infections, including pneumonia, caused by susceptible strains of *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Streptococcus pyogenes* (group A β -hemolytic streptococci).

Contraindication:

Known allergy to cephalosporins.

Warnings:

CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients. Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea): 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever): 1.5%; usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness,

insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.

- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%; and, rarely, thrombocytopenia.

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President's Pages

INAUGURAL ADDRESS

Thomas C. Rowland, Jr., M.D.

April 30, 1988



The United States can honestly boast of the best health care system in the world. The past 30 years, which represents my experience in medicine, have been called the "Golden Age of Medicine." Some have indicated that the "Golden Age" is over. This is not true! Scientific knowledge and technology continue to advance at a rate that is incomprehensible. Our diagnostic ability has improved so much in the past 30 years that it is uncanny, and advances in therapeutic methods and drugs have closely followed.

The advent of C.T. scans; endoscopic examination of the upper and lower gastrointestinal tracts; laparoscopic examination of the peritoneal cavity, and even biopsy of the first trimester placenta in vivo—performed daily in most communities—would have seemed like science fiction when I was in medical school.

It is not unusual for pound and a half premature babies to survive in our intensive care nurseries. In vitro fertilization is a commonplace procedure in treating some forms of infertility. Psycho-therapeutic drugs have removed the walls and gates from many mental institutions. And we are using "Buck Rogers ray guns," or lasers, daily in coagulating and vaporizing diseased tissue.

Who would have believed that we could have our obstructed coronary arteries opened with a balloon to prevent an impending myocardial infarction. Or even have our blocked coronary artery by-passed with a vein graft in the process of infarcting. Or have a heart transplant when the myocardium fails completely?

All of these advances and improvements enhance both the quality and length of life in our great country. But everyone here knows that you don't get something for nothing! While the knowledge and technology we have developed makes our health care better, it also has made it much more expensive and much more complex.

The extent of knowledge and expertise in medicine has transcended the ability of the single mind to comprehend. There is no generalist in medicine who can learn it all. We are far removed from the family doctor who knew all and did all. We have developed multiple sub-specialty practices, where an individual is able to keep up with the knowledge and procedures of his small niche in the big picture. But while we practice very precisely and perfectly in our own little segment, we frequently lose communication with the whole patient. And nowadays, patients expect perfection from us because the media tells them it is available.

Because of the increased cost and demand—and in conjunction with the "Great Society" proposed by the late President Lyndon Johnson—the availability of excellent health care is considered a right by our citizens. In response to this right, our government has provided Medicare and Medicaid for the elderly and the poor.

Entrepreneurial MBA's have developed the "alphabet" method of delivery—the HMO's, PPO's, IPPA's, etc.—various schemes designed to provide all available medical care to everyone at a more economical price. And, of course, the entrepreneurs take a sizeable bite for their concern.

Insurance companies have developed usual and customary insurance plans. Most of these are marketed to the public by a sales team that apparently has no communication with the claims processors in the same company.

PRESIDENT'S PAGES

All of these developments have resulted in two new roles for physicians. The theme of this 140th annual meeting of the South Carolina Medical Association is "Ethics." The forefathers of American medicine—Osler and Halstead, and even those closer to us, such as Mosely, Prioleau and Waring—would have a difficult time relating their understanding of medical ethics to the two roles that have been thrust upon the modern physician—that of tort-feasor and provider.

It is the development of these new roles for medical doctors that I would like to discuss with you tonight, and in doing so, convince you that we must do all in our power in organized medicine to preserve our original role—that of being a physician.

The role of tort-feasor is a relatively new role for medical doctors. Black's Law Dictionary defines a tort-feasor as "a wrong-doer; one who commits or is guilty of a private or civil wrong or injury." Of course, doctors have always been potential tort-feasors, but only in the last decade have we been frequently exposed to this role. We have been forced to become familiar with terms such as "statute of limitations," "contributory negligence," "comparative negligence," "joint and several liability," and "collateral source" among others—terms more correctly learned in law school, not medical school.

Because of our new role, we have become more aware of the mechanics of our judiciary system and the difference between the trial bar and the defense bar. We have become more aware of the power of a judgeship and the power of a Legislature composed of many trial lawyers who elect our judiciary.

Our country has become the most litigious society in the world. Last year, there was one private civil lawsuit for every 15 Americans. An estimated 16.6 million private lawsuits were tried in federal court—nearly double the number tried a decade ago.

I remember that in the early 1970's a respected defense attorney in Columbia, and a personal friend of mine, spoke to the Columbia Medical Journal Club. He announced to the audience that since automobile accident tort law had been relegated to a no-fault system, we could expect a rapid increase in medical malpractice activity in South Carolina. His prophecy certainly has materialized.

However, the momentous increase in the litigious nature of our society is not by any means limited to medical malpractice. Paul F. Orefice, head of Dow Chemical Company, says that "Liability is a critical factor in the decline of American competitiveness. The whole climate of doing business in the United States suffers under huge legal responsibilities imposed on all areas of the profit and non-profit sectors. Ultimately," he notes, "consumers are hurt, too, because liability costs are passed on to them in the form of higher prices, discontinued or underdeveloped goods and services. Somehow," says Orefice, "we moved from being an innovative, creative and dynamic society to becoming the most litigious people on earth. If that trend continues," he says, "it could stop both our industry and our nation dead in its tracks."

Why in the past 20 years has medical malpractice suddenly reared its ugly head into our professional and private lives? Is it because there are more bad or incompetent doctors providing truly bad care for their patients? The answer to that question is a resounding, "No!"

In my specialty alone, 73 percent of all OB-GYN practitioners have been sued. A new OB-GYN starting practice today can expect to be sued eight times during his professional career. In this era of selectivity for medical education with residencies, sub-specialty fellowships and all of the related board certification and re-certification processes, it is hard to imagine that there are many bad doctors in practice. When I was active in the South Carolina Medical Care Foundation—our peer review organization—we concluded that some five to seven percent of this state's physicians were suspect, and our findings compared favorably with national statistics of peer review organizations.

So I ask you, why is medical malpractice such a big problem in the U. S. where everyone agrees we have the best health care in the world? Could it be because there are so many lawyers trying to earn a living? There are more students in law schools than in all the graduate schools of engineering, chemistry and bio-science combined.

The University of South Carolina is producing four to five times more lawyers now than 20 years ago. At a recent USC graduation exercise, 40 young doctors received their M.D. degrees followed by 250 new lawyers receiving their J.D.'s. The comment was made that this must mean it only takes one doctor to support five lawyers!

Could the malpractice crisis be the result of insurance? Again, I ask, which is the chicken and which is the egg? We are the most highly insured physicians in the world. Could it be that greed is the problem? Yes, this may be a basic problem, given the high insurance coverage, the large number of lawyers searching for professional survival, and a very litigious society looking for an easy, tax-free award or reward for their "suffering!"

No, I do not believe physicians are practicing bad medicine, but we can accept some of the blame for the malpractice situation. Medicine is not an exact science, but the American people have come to expect excellent results in every case. There is no room for a "runt in the litter." It is up to us to do a better job informing our patients that just as nature is not perfect, medicine is not perfect either.

Communication, or the failure to communicate, I believe, is the common denominator of all malpractice actions. In reviewing records and as serving as an expert witness in malpractice actions, it is my personal observation that the failure to communicate between doctor and patient is probably the basic cause of malpractice lawsuits in all cases.

In most situations where there are bad, or less than good, results, a lawsuit is not brought against an accessible, caring, communicating physician—one who the patient considers his true advocate.

And finally, we must not leave a discussion of physician-related contributions to the malpractice crisis without mentioning our sins of commission, as well as omission. One needs only to look in the classified ads of the legal journals to find column after column of physicians citing their credentials and willingness to be experts for either side of a lawsuit for enough money.

We all have had exposure to this group of colleagues who are frequently not experts at all—just greedy. At a recent national meeting, I asked a group of academic OB-GYNs why so many outstanding professors appear as expert plaintiff witnesses. Their answer, "Big bucks!" Our professional forefathers would shudder at the thought of our advertising professional services, but to bring it one step further and to advertise as experts against each other is despicable.

A final bit of poor communication important to remember is related to our own egos. A great number of lawsuits are precipitated by colleagues who unthinkingly make comments about the previous physician or medical care within earshot of the patient. "That certainly is an ugly scar." "He didn't notice your limp?" "Who read your x-ray?" "He treated you over the phone?" Most of these comments are innocent of bad intentions, but definitely ego motivated and could best be left unsaid.

However, tonight there is good news for all of us potential tort-feasors in South Carolina. The malpractice crisis in our state is not what it is in other states, even neighboring states like North Carolina and Georgia.

In South Carolina, the number of claims increased from 79 in 1975 to 327 in 1983, but went down to 255 in 1984. Nationally, the average jury verdict in malpractice cases rose from \$220,000 in 1975 to \$1 million in 1985. But in South Carolina in 1984, 25 percent of claims made were abandoned by the claimant, 41 percent were closed without any payment, and 16 percent were paid an average of \$21,000 each. There have been only a few very large verdicts of \$1 million or more in our state.

While JUA premiums have increased about fourfold during the past 10 years, the premium for the most "at risk" physicians in South Carolina is less than \$15,000 per year. Comparable premiums in Georgia and North Carolina are four to five times as much, and in Florida, they may range upward of \$150,000. I have been told that JUA premiums will remain stable or possibly show a slight decrease this year. So perhaps instead of working for tort reform, we should be urging passage of strong immigration laws to discourage the migration of physicians from less favorable environments!

And in speaking of tort reform, I cannot close without saying a word on the tort reform bill signed into law this month. This bill is not all that we hoped, but it is a step forward.

We have established a legal cap on damages for state employed physicians. We have exempted physicians who are performing charity services, if they acknowledge their charitable intentions up front. We have lowered the statute of limitations. We have preserved contributory negligence and avoided comparative fault, which is probably the best point of the law. We have not changed the collateral source rule. And joint and several liability, which was not included by the Legislature, fortunately is not the problem for physicians that it is for other business people. I truly believe that the most serious obstacle to

true tort reform in South Carolina is that the crisis in medical malpractice is not yet great enough.

The relatively new role of doctor as tort-feasor is repugnant to everyone in medicine. Lawsuits are personal to physicians. They allege incompetence in our professional and day-to-day work. Lawsuits are emotionally charged affronts to our personal self esteem from patients for whom we have cared. The one bright note in this sorry situation is that four out of five medical malpractice suits result in no payment to the plaintiff, and almost three-fourths of the doctors who go to trial are successfully vindicated.

The second new role for medical doctors is that of provider. In 1965, President Johnson created Medicare, saying "No longer will older Americans be denied the healing miracle of modern medicine." With the passage of this law, physicians became the providers of medical care to elderly Americans under the auspices of the federal government as the third party financier. As a physician in training in the early '60's, I can distinctly remember locker room conversation about the potential nightmare of government control.

What we in the medical community have discovered after 20 years of federal health care programs is that it requires more than a stethoscope to treat Medicare patients. It takes a computer and a calculator as well. National health care, which in 1975 was a \$75 billion program, has mushroomed to \$458 billion in 1986. The cost of administration alone is about \$25 billion. Medicare's rules and regulations are so complex that the AMA's summary of the 1987 changes took a full 25 pages to explain.

Medicare payments to physicians have been based on a system of paying a percentage of the lowest customary, prevailing and reasonable charges. Originally, we were paid 90 percent of charges, but now this has been reduced to the 75th percentile of prevailing charges in 1971 as adjusted by the Medicare economic index. Physician fees were frozen for an additional 15 months after the termination of the federal wage and price freeze of the 1970's. If this system was not mind boggling enough, it has been complicated by the participating physician program in 1984 and the maximum allowable actual charge for non-participating physicians in 1986. And the saddest part of all is that despite all these complicated formulas, Medicare actually pays less than half the total health care costs of its beneficiaries.

In addition to this tangle of bureaucratic red tape, physicians also must contend with the government's oversight organization, which we now know as PRO. This program, supposedly established to see that patients receive appropriate and quality care from providers, now candidly admits that it is interested only in bottom line cost savings.

And because of this bean counting mentality, Medicare beneficiaries may be written letters indicating that their trusted family physician of many years has not rendered appropriate care. This may be because, in the judgment of the family doctor, the patient was better off being admitted for a treatment than treated as an out-patient, as the government preferred. Or maybe the patient required a day or so longer in the hospital than the established standard.

This system has very little consideration for individual personalities or personal situations—two considerations that every physician knows can have a very important impact on the overall well being of his patient. It is interesting to note that the South Carolina PRO spent some \$100,000 auditing the Medical University Hospital because not enough Medicare patients died in the hospital during a given period of time!

Of course in addition to Medicare, there is Medicaid, the state's way of providing medical care for their needy. Here access to the system by patients and providers is more complicated and cumbersome than Medicare—if that's possible. All of the i's must be dotted, the t's crossed and all blanks appropriately completed. There have been several cases in South Carolina where actual criminal charges have been levied against a provider who failed to properly satisfy bureaucratic requirements that may have seemed inconsequential in the day-to-day care of sick people. The result is that in many cases, the Medicaid payment is not enough to justify the bureaucratic paperwork.

All of government funded medicine is facing some tough decisions—decisions that will affect not only providers, but beneficiaries and taxpayers as well. The 10.6 percent of the Gross National Product we spend annually on Medicare is providing only about 50 percent of the medical costs of caring for the elderly. Further, 70 percent of these funds are spent on 10 percent of the elderly population, and most of it is spent on terminal care. When former Gov. Richard Lamm of Colorado said that "the terminally ill elderly have a duty to die" he stirred a nationwide controversy.

Should we ration medical care to the elderly? Who will decide at what age coronary bypass or organ transplants are no longer cost effective? In great Britain, renal dialysis is not available for those beyond the age of 55. Can the individual states afford to provide these expensive state-of-the-art procedures for their poor? Or will these problems create a two-tiered system of care—one for the insured and affluent and the other for the elderly and the poor? These are some of the difficult questions we are facing.

An editorial in the *Wall Street Journal* suggested dismantling the entire Medicare bureaucracy and dividing the entire budget among the beneficiaries as an annual health stipend. This plan would certainly put health care of the elderly in the unregulated market place and might possibly solve a lot of these problems.

In addition to Medicare and Medicaid, we providers have also been faced with a whole alphabet of health care delivery systems. At my first AMA leadership school in the early 1980's, we were told that the traditional physician-patient fee for service system of health care delivery in the U. S. was about to end. Instead, we would be providers for HMO's, PPO's, IPPA's.

It was predicted that every major insurance company, and even large department stores like Sears-Roebuck, would be delivering health care. There would be chains of "Docs in the box" networking the country, delivering health care in every field with very little consideration for the individual personality or situation. We would be the providers in such a system because there would be no place else for us to work. MBA's and hospital administrators would determine our work places, our earning ability, as well as the quality of care we rendered.

Yes, the early 1980's saw a growth in these kinds of delivery systems. Nationwide the number of PPO's grew from 13 to 454 from 1980 to 1986. The number of HMO's peaked at 595 in 1986. In South Carolina, there were eight HMO's in business in 1986, serving about 5.5 percent of the population. But we know what happened to two of these.

In 1986, only three of the eight HMO's met state and federal financial and benefits criteria. In the last two years, the number of HMO's has begun to decrease nationwide. Major insurance companies have begun to get out of the health care delivery business. And personally, I have never seen a doctor's office in a Sears store.

Now, only about 10 percent of the population in the U. S. receive their health care from these sources, and most of these people are forced into the arrangement by their employers. Maybe the entrepreneurs will eventually see that most people prefer to choose their own personal physicians.

Tonight, I have spend most of this time talking to you about the physician as tort-feasor and provider. Unfortunately, we deserve these two new roles for many reasons. Medical doctors have become too aloof. We hide behind answering services and unlisted telephone numbers. We hide behind our partners in large group practices which often become too impersonal and business-like. With the development of an incomprehensible quantity of medical knowledge and sophisticated technology, we have become super specialized. We may limit our interest to a single organ of the body without much concern for the whole person to whom it belongs.

We have made ourselves less available and the result is the success of hospitals practicing general medicine in their emergency rooms and "Docs in the box" entrepreneurs. We must communicate to our patients that we *do* have time to listen and that we *do* care about their problems. They must be made to understand that we have been their advocates even when the outcome is not perfect.

We have also failed in our responsibility to provide intelligent leadership. Rather than using our knowledge and understanding of medical practice to help develop the Medicare program into a workable and affordable model, our profession continues to expend most of its leadership energy blocking its passage through Congress.

In New York State, the failure of medical leadership to identify AIDS as a sexually transmitted disease resulted in the legal profession making this determination. And what of our response to the management of AIDS patients? Will our lack of regard for our own ethics result in legislation and lawsuits that will dictate how we practice?

And last but not least, our own greed for materials things has contributed to this situation. What are the ethics of a physician in the role of gatekeeper for a third party payer? Should we select an "almost as good

PRESIDENT'S PAGES

treatment" because it leaves more money in the pot for ourselves and our contractor? Maybe it is not unreasonable to have to answer for "almost as good results" in a court of law.

Physicians have always been held in the highest regard of all the professions. With the assumption of these two new roles—tort-feasor and provider—this image may have become a little tarnished. The brightest young minds and most attractive young people have always competed to get into our profession. But recently, applicant pools to medical schools have decreased to less than two applicants per class position. Many of our most promising young people are looking to other professions for their life's satisfaction.

A French philosopher once said, "We must not only give what we *have*; we must give what we *are*." The mystery and qualities necessary for being a physician must come from within. These qualities may be nurtured and developed during medical training, but they cannot be taught per se. The qualities that make a true physician cannot be bought by governments or insurance companies. Neither can they be legislated or regulated.

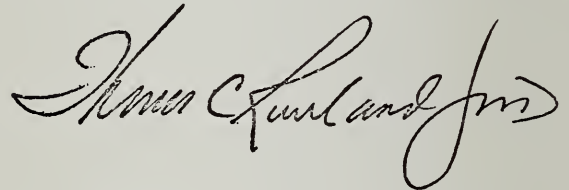
Physicians must have the curiosity of scientists and the intelligence to understand. They must have the common sense to apply what they know. They must have tireless stamina and willingness to work hard and long. They must have the basic integrity required to be true unselfish advocates of their patients' well-being.

To be physicians requires a caring and compassionate regard for one's fellow man. They must be able to communicate and be willingly available to their patients. Physicians must also assume responsible, leadership roles in community citizenship. You can readily see that being a graduate of a medical school and a simple provider of health care is not enough to qualify you for the title of physician.

My message then to you this evening is summarized in a verse by Eileen Lynch:

Ride, ride the carousel and reach for the golden ring.
Never to finish but begin again. Life is a circular thing.

Let us complete the circle by returning to our original role. Be a physician. The "Golden Age of American Medicine" is only over if we physicians let it die.



THOMAS C. ROWLAND, JR., M.D.
President



ADULT T-CELL LEUKEMIA/LYMPHOMA: A RETROVIRAL MALIGNANCY ENDEMIC IN SOUTH CAROLINA*

ROBERT N. HEADLEY, JR., M.D.
RON D. SCHIFF, M.D., Ph.D.

Adult T-cell leukemia/lymphoma (ATLL) is a distinct clinicopathologic syndrome which is being recognized with increasing frequency in the southeastern United States. The syndrome is characterized by generalized lymphadenopathy, hepatosplenomegaly, hypercalcemia, lytic bone lesions, cutaneous involvement, and circulating helper T lymphocytes with pleomorphic nuclei. The disease appears to be a consequence of infection with human T-lymphotropic virus type I (HTLV-I), a human retrovirus which was first isolated in 1978 from a 28-year-old black man from Alabama with a cutaneous T-cell malignancy.¹ Seroepidemiologic studies subsequently demonstrated that HTLV-I infection is associated with ATLL in southwestern Japan, where the clinical syndrome was first described.² Other endemic regions for infection with HTLV-I and for the occurrence of ATLL are the Caribbean islands, parts of Africa, and the southeastern United States.³

ILLUSTRATIVE CASE

The clinical characteristics of four patients with ATLL seen at the teaching hospitals of the Medical University of South Carolina are summarized in Table 1. Patient 4 was a 32-year-old black male from coastal South Carolina who was admitted to the hospital with a five-day history of nausea, vomiting, weakness, and progressive lethargy.

The patient was noted to be disoriented and confused. Admission physical examination was remarkable only for the presence of hepatosplenomegaly. A complete blood count revealed hemoglobin 17.4 gm/dL, hematocrit 50.4%, white blood cells 20,000/mm³ and platelets 81,000/mm³. Differential leukocyte count was 6 banded neutrophils, 21 segmented neutrophils, 10 normal-appearing lymphocytes, and 63 abnormal lymphocytes with pleomorphic, cleaved, or convoluted nuclei (Figure 1). A serum biochemical profile included urea nitrogen 38 mg/dL (normal 8-18), creatinine 1.9 mg/dL (normal 0.5-1.3), calcium 18.0 mg/dL (normal 9.0-10.6), inorganic

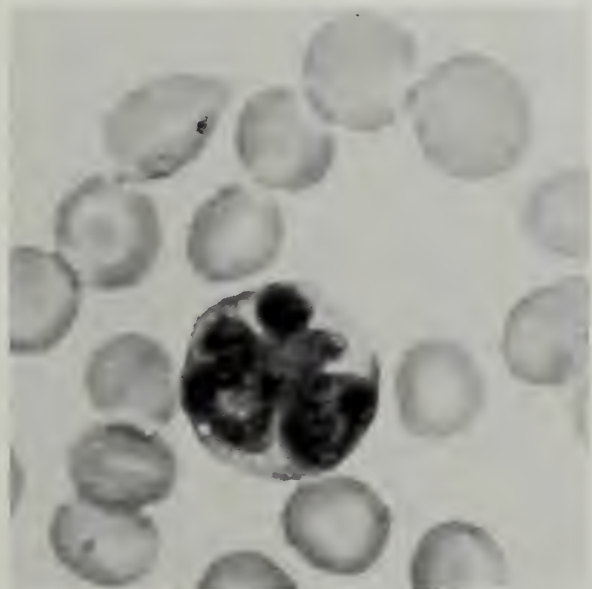


FIGURE 1

* From the Division of Hematology/Oncology, Department of Medicine, Medical University of South Carolina, Charleston, SC 29425.

TABLE 1

Clinical Characteristics of Four Patients with Adult T-Cell Leukemia/Lymphoma
Seen at the Teaching Hospitals of the Medical University of South Carolina

Patient No.	1	2	3	4°
Age, years	74	28	53	32
Race	Black	Black	Black	Black
Sex	Male	Male	Female	Male
Lymphadenopathy	+	+	+	—
Hepatosplenomegaly	+	+	+	+
Leukemia	+	+	+	+
Hypercalcemia	+	—	+	+
Skin involvement	—	—	—	—
Survival from diagnosis	3 days	11+ months	5 months	1 month

° Detailed case presentation in text.

phosphate 3.3 mg/dL (normal 2.8-4.8), uric acid 11.5 mg/dL (normal 2.0-7.5), total bilirubin 1.4 mg/dL (normal 0.2-1.0), alkaline phosphatase 241 IU/L (normal 64-119), aspartate transferase 94 IU/L (normal 21-46), and lactate dehydrogenase 481 IU/L (normal 77-182). Urinalysis, prothrombin time, activated partial thromboplastin time, and chest radiograph were all normal. A bone marrow core biopsy demonstrated diffuse infiltration with abnormal lymphocytes resembling those identified in the peripheral blood. Flow cytometric analysis revealed that the abnormal lymphocytes bore cell-surface antigens defined by the OK T3, T4, and T11 monoclonal antibodies, consistent with the antigenic phenotype of mature helper/inducer T lymphocytes. Cytogenetic analysis revealed a normal male karyotype. Antibodies directed against the major core protein of HTLV-I were detected in the serum. Accordingly, a diagnosis of ATLL was made.

Aggressive intravenous hydration with saline produced minimal lowering of the serum calcium. Four days after admission, chemotherapy was initiated with cyclophosphamide, doxorubicin, vincristine, methotrexate, and high-dose methylprednisolone. This treatment resulted in rapid normalization of the serum calcium and a marked reduction in the number of circulating malignant lymphocytes. However, one week after admission, the patient developed bilateral diffuse pulmonary infiltrates and progressive respiratory failure. Endotracheal intubation and mechanical

ventilation were required, and bronchoscopy was performed. *Cryptococcus neoformans* was isolated from bronchial washings. Antifungal chemotherapy with amphotericin B led to transient stabilization of the patient's respiratory status, but further deterioration ensued, culminating in a clinical picture of refractory hypoxemia consistent with the adult respiratory distress syndrome. The patient's course was further complicated by the development of profound pancytopenia and persistent fever. Despite the addition of empiric broad-spectrum antibiotic therapy to the patient's antimicrobial regimen, he died of progressive respiratory failure 35 days after admission.

CLINICAL FEATURES

ATLL is a recently described syndrome with distinct clinical characteristics. Most cases of ATLL in the United States and other endemic regions outside Japan involve young black adults (mean age at diagnosis 42 years). The disease usually has an acute or subacute onset and an aggressive clinical course, although an early smoldering or chronic phase can be identified in up to one-third of patients. Patients with full-blown disease present with generalized lymphadenopathy, hepatosplenomegaly, hypercalcemia, lytic bone lesions, and involvement of the skin and peripheral blood.⁴ Hypercalcemia is present in over 80 percent of patients and may occur in the absence of lytic bone lesions. Bone scans may reveal a generalized increase in radionuclide up-

take ("superscans"). The hypercalcemia appears in some cases to be due to the production of an osteoclast activating factor-like substance by the malignant lymphocytes. Circulating abnormal lymphocytes are present in virtually all cases. These cells are characterized by lobulated, "cerebriform" nuclei and scant basophilic cytoplasm. Flow cytometric analysis reveals these cells to have the surface antigens of mature T lymphocytes of the helper/inducer (OK T4-positive) phenotype, although assays of lymphocyte function demonstrate the cells to have a cytotoxic/suppressor functional phenotype *in vitro*. Over 50 percent of patients have peripheral or retroperitoneal lymphadenopathy; mediastinal lymph node involvement is uncommon. The histologic findings in involved lymph nodes and other tissues are varied. Most cases in the United States can be classified as diffuse mixed or diffuse large-cell lymphomas. In contrast to other non-Hodgkin's lymphomas, however, the precise histologic classification of a particular case of ATLL does not appear to influence the prognosis. Other frequent sites of involvement include the skin (presenting as nodules, plaques, or erythematous patches), liver, spleen, lung, bone marrow, and leptomeninges.⁴ The absence of cutaneous involvement in the patients in our series is noteworthy, although its significance is uncertain. Opportunistic infections are common despite normal granulocyte counts and serum immunoglobulin levels. *Pneumocystis carinii* pneumonia, bacterial and fungal sepsis, cryptococcal meningitis, and herpesvirus infections have all been reported in patients with ATLL. The occurrence of such infections presumably reflects immune dysregulation at the level of the helper/inducer T lymphocyte. Complex chromosomal abnormalities are frequently present. The degree of chromosomal aberration may be related to the severity of the clinical course.

EPIDEMIOLOGY AND VIROLOGY

HTLV-I was the first retrovirus to be clearly implicated in the etiology of a human malignancy. Circulating antibodies directed against the major internal structural (core) proteins of HTLV-I can be detected in nearly all patients with ATLL. The virus has been isolated from the cultured malignant T lymphocytes of patients with ATLL, and its reverse-transcribed DNA has

been found by molecular hybridization analysis to be integrated into the chromosomes of these cells. HTLV-I seropositivity has also been reported to be closely associated with a recently described neurologic disorder, tropical spastic paraparesis.⁵ HTLV-I has a worldwide distribution, although the vast majority of cases of ATLL have been reported in southwestern Japan, the Caribbean islands, the southeastern United States, and parts of Africa.

Studies from Japan have suggested that the latent period between HTLV-I infection and the development of ATLL is many years, with the syndrome occurring only in adults. Although reports of cases of ATLL and HTLV-I seropositivity are becoming increasingly common in the United States, particularly in the Southeast,³ no large-scale prospective epidemiologic study has yet been initiated. As a consequence, the available epidemiologic data on the prevalence of ATLL and HTLV-I infection in the United States are extremely limited. Seroepidemiologic testing of clinically normal individuals has shown multiple possible patterns of HTLV-I transmission. The virus may be transmitted from mother to fetus or newborn through passage of infected lymphocytes transplacentally or in breast milk. Homosexuals and intravenous drug abusers also appear to be at increased risk for HTLV-I infection. Recent NIH reports suggest that the prevalence of seropositivity for HTLV-I infection in these groups may be significantly greater than in the general population, as is also seen with a related virus, the human immunodeficiency virus.⁶ Another possible route of HTLV-I transmission may be the transfusion of infected blood products. A retrospective study in Japan indicated a 63 percent incidence of seroconversion among patients receiving blood that was subsequently found to contain anti-HTLV-I antibodies.⁷ This observation has led to the routine screening of blood products for anti-HTLV-I antibodies in Japan. It is anticipated that a similar screening program will be implemented in the near future by blood banks in the United States in association with the American Red Cross.⁸

TREATMENT

There is no satisfactory treatment for ATLL, which is regarded as one of the hematologic malignancies most refractory to chemotherapy. Most

ADULT T-CELL LEUKEMIA/LYMPHOMA

patients to date have been treated with combination chemotherapy regimens used in intermediate- and high-grade non-Hodgkins lymphomas. These regimens include CHOP (a combination of cyclophosphamide, doxorubicin, vincristine, and prednisone) and ProMACE-MOPP (consisting of prednisone, methotrexate, doxorubicin, cyclophosphamide, and etoposide alternating with mechlorethamine, vincristine, procarbazine, and prednisone).⁴ Deoxycoformycin administered as a single agent has produced a long-lasting remission in one previously untreated patient with ATLL,⁹ although subsequent results in six patients whose ATLL had progressed or relapsed after CHOP chemotherapy were discouraging.¹⁰ The majority of patients achieve a brief remission; response durations greater than one year are rare. Median survival after diagnosis for patients in the United States is nine months.⁴ Relapses commonly occur at the sites of initial involvement or in the leptomeninges. Causes of death include recurrent tumor and opportunistic infections.

Clearly, new approaches to the treatment and prevention of ATLL are urgently needed. It is hoped that such advances will soon be forthcoming from the continued progress in understanding the biology, epidemiology, and clinicopathologic features of HTLV-I infection and ATLL. □

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BONE LOSS AND PHYSICAL INACTIVITY: A PROPOSED THERAPEUTIC EXERCISE REGIMEN*

C. DAVID TOLLISON, Ph.D.
MICHAEL L. KRIEDEL, Ph.D.

A review of the literature suggests evidence for physical exercise as a means of preventing the onset and/or progression of osteoporosis, particularly in the population of aging females. Yet, the specific role of physical exercise in the treatment of osteoporosis has yet to be unequivocally defined. A number of researchers have reported that physical activity and exercise increase bone mineral content in participants. There also exists adequate documentation that bone atrophy occurs in the absence of physical activity and bone hypertrophy occurs when individuals participate in sufficient physical exercise. Therefore, while physical exercise is but one of numerous factors in osteoporosis, the literature consistently purports activity and exercise as potentially therapeutic in the prevention and management of osteoporosis.

Assuming the therapeutic value of physical exercise and activity in the prevention and management of osteoporosis, the question that naturally arises concerns the length, intensity, and type of exercise required to maintain bone tissue in the population of advanced age. Smith et.al.¹ demonstrated in the study of geriatric females that a supervised exercise program for 30 minutes per day, three days per week for three years produced a significant gain in bone mineral content, while a matched control group lost mineral content during the investigation. From a clinical perspective,

however, the research of Smith et.al.¹ suffers two practical delivery problems. The first problem is that exertional activity, while effective, was delivered three times per week for three years under close supervision—obviously impractical outside of a research setting. The second problem is that the experimental program included over 90 different exercises. This voluminous number allows little chance of memory and the performance of such an extensive program without regular prompting and supervision.

Over the past eight years we have treated over 1,300 females between the ages of 51 and 79 years in a hospital-based pain management and restorative rehabilitation program. Many of these patients have suffered either a primary or secondary diagnosis of osteoporosis and the disorder and symptomatology have ranged in severity from mild to moderately severe. Although all treatment plans are individualized within an intensive and comprehensive multimodal program, an approach common to all patients is an emphasis on a highly structured program of physical exercise.

This paper will report on a physical exercise program that has empirically demonstrated therapeutic value in a large population of patients suffering osteoporosis. Consistent with the exercise program advocated by Smith et.al.,¹ this regimen involves minimal stress load motion. However, in sharp contrast with previous research, the current regimen consists of only seven basic exercises that can be memorized for home practice.

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BONE LOSS AND INACTIVITY

Lateral Arm Swing

The Lateral Arm Swing may be performed by standing with the feet flatly apart and the arms out to the sides or in a sitting position as shown in Photograph 1. The arms should gently swing out in front in a crossing pattern before returning to the original position. The exercise is intended to be repeated in a rhythmic fashion until fatigued. The patient is instructed that endurance should build naturally with practice.



Vertical Arm Swing

This exercise may also be performed in a sitting or standing position. The patient begins by allowing both arms to naturally hang by the sides. Next, one arm swings overhead before switching positions in a constant rhythmic motion.



BONE LOSS AND INACTIVITY

Bend Sitting

This exercise should be performed while sitting in a straight chair with the feet apart. The upper body weight should be rested on one knee as shown. The patient then leans forward with the free arm swinging between the legs. Patient should be warned to perform the exercise in a fluid motion and to avoid skeletal stress by overly bending.



Knee-Chest Repetitions

Knee-Chest Repetitions may be performed in a sitting or supine position. The patient grasps the knee and gently pulls forward toward the chest. When fatigued, the patient is encouraged to alternate extremities.



BONE LOSS AND INACTIVITY

Pelvic Tilt

To perform the Pelvic Tilt, the patient assumes the supine position with knees bent and feet flat on the floor. With the arms lying by the sides, the lumbar spine is "pushed" into the floor by tightening the buttocks and abdominal muscles. Patients should be warned that the buttocks should not be lifted from the floor.



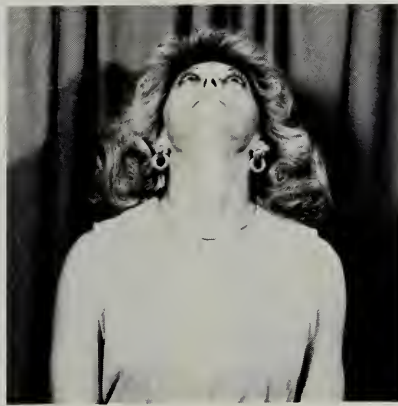
Leg Lifts

The patient starts by assuming a supine position with the arms out to the sides. With the knee only slightly bent, one leg is smoothly lifted off the floor and toward the ceiling. The patient returns to the original position before alternating the other leg.



Head Rolls

This exercise should be performed while sitting in a straight chair with the feet apart and arms providing stability and support. The patient starts by lateral bending of the head at 90 degrees and continues through the 360 degree range. Patient should be cautioned to roll the head in slow motion quarter turns to avoid vertigo.



DISCUSSION

These exercises have empirically proven safe, practical, and beneficial in a clinical population of women of advanced age suffering either a primary or secondary diagnosis of osteoporosis. Patients are carefully instructed in the mechanics of the exercises until knowledge is demonstrated. Instructions include encouragement to perform the exercises once or twice daily at home on a consistent schedule.

An informal study of adherence to the exercise program was recently concluded by telephone survey of 31 patients chosen at random. Results indicated that 84 percent of the patients reported practicing the exercise regimen at least once per day and 90 percent rated the exercises as therapeutic. Several of the patients reported participating in the exercise program each day while listening to upbeat music on a radio or cassette player.

Experimental design research is needed to document the statistical effectiveness of this physical exercise program in preventing bone mineral loss and osteoporosis.

SUMMARY

Research suggests that bone mineral content and hypertrophy are locally controlled and respond to physical activity and exercise. The implications of this in the prevention/management of osteoporosis is obvious. In this paper a clinical regimen of physical exercise formulated on the basis of treating a large population of females between the ages of 51 and 79 suffering either a primary or secondary diagnosis of osteoporosis is outlined.^{*} The regimen is sufficiently abbreviated to allow memorization and may be practiced by patients in their homes. □

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^{*} Patients in this study were evaluated and treated at PAIN THERAPY CENTERS of Greenville (Greenville Hospital System), Columbia (Richland Memorial Hospital), and Florence (Bruce Hospital System), South Carolina.

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ASBESTOS EXPOSURE AND LUNG CANCER: THE ROLE OF KENNETH M. LYNCH AND WILLIAM ATMAR SMITH

BERNARD E. FERRARA, M.D.*

In 1964, the *Journal of the American Medical Association* published a study by Selikoff, Churg, and Hammond that would profoundly affect preventive medicine, industrial management, national and state legislation, and legal and insurance professions, disability and compensation laws, and American business. Of what did Selikoff, et.al., write that had such far reaching effects? The title of the paper was "Asbestos Exposure and Neoplasia." It focused upon a public health problem, some aspects of which are yet being adjudicated. The momentous changes, wrought by this publication, prompted the *JAMA* to republish the paper in 1984 as one of its series of "Landmark Articles." It was reprinted also in the section "Classics in Oncology" in *CA—A Cancer Journal for Clinicians*.¹

The report emphasized the development of neoplasia, particularly lung cancer, resulting from asbestos dust exposure among insulation workers, and cited the danger to others who worked where asbestos was used. In recent years, as litigation has focused upon asbestos exposure as a contributing or inciting factor in an individual's illness or death, the magnitude of the asbestos problem is apparent. It touches the lives of almost everyone. Walls of asbestos content in public buildings are torn out because of possible hazard. Laws limiting asbestos exposure have been legislated for protection of workers. Production in the asbestos industry of the United States increasing from 6,000 tons in 1909 to 650,000 tons in 1973, had declined to 300,000 tons by 1982. And, one asbestos manufacturer progressed to bankruptcy.^{2, 3}

The Selikoff study was based upon accumulated information indicting asbestos as a carcinogen. At the turn of the century in England, pulmonary fibrosis was observed in asbestos work-

ers. By 1930, an increasing death rate from pulmonary fibrosis was reported from England, France, and Italy. Although lung cancer had been observed in asbestosis, it was not until 1935 that asbestosis was cited as the cause. This first citation was by K. M. Lynch and W. A. Smith—both of Charleston, South Carolina.⁴ They recognized that the bronchial irritation from asbestos exposure predisposed to the development of cancer. Gloyne in England, also in 1935, reported similar observations and cited the paper of Lynch and Smith.⁵ The concept that Lynch and Smith advanced was almost universally accepted but was difficult to prove. Since the period of exposure to the one, to the development of the other, was lengthy, a structured study was necessary to establish the allegation as factual. The Selikoff study was so designed. It was such a landmark report that by 1984 it had been referred to 261 times in scientific publications.²

Lynch and Smith's report was published in the *American Journal of Cancer* 24:56-64 (May) 1935 as "Pulmonary Asbestosis: Carcinoma of Lung in Asbestosilicosis." The historical importance of this report, as a medical first, has been established.¹⁻³ They were the first to make the affirmation that lung cancer, associated with asbestosis, resulted from the bronchial irritation of asbestos exposure. This significant contribution was a result of Lynch and Smith's continuing study of pulmonary disease, which they pursued without the advantage of economic abundance. In 1935, the south was monetarily disadvantaged, and certainly, Charleston and the Medical College of South Carolina suffered. In spite of the economic adversity, these two are acclaimed for a medical first. This promotes the realization that in that difficult time they were men of moment at the Medical College. The Medical College of South Carolina was established in 1824. In 1832 the name was changed to the Medical College of

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the State of South Carolina. In 1952 the name reverted back to the Medical College of South Carolina. In 1969 it became the Medical University of South Carolina.

The Medical College of South Carolina is now the Medical University of South Carolina. The full time faculty in any one clinical department would be larger than the entire faculty of the school in 1935. Following the Flexner Report of 1910, the school was rated B Class, and was an educational backwater in a sea of impoverishment. In 1935, K. M. Lynch was just beginning his leadership role at the Medical College, and his plans for modernization and future expansion were being formulated.

Who were Kenneth M. Lynch and William Atmar Smith? The imputation of a medical first—The Association of Asbestosis and Cancer—was not the apogee of their medical careers. Each, in his own way, contributed greatly to the medical community of Charleston and the state of South Carolina. Each was an educator and teacher—one a dedicated academician; the other, a splendid practitioner of internal medicine.

Kenneth M. Lynch is the most prestigious figure who has been associated with the Medical University of South Carolina. He distinguished himself in all aspects of his medical career. His accomplishments are legion; and his stature casts a long shadow, such that no successor is likely to equal. As Vice Dean (1934-43), Dean (1943-49), President and Dean of Faculty (1949-60), and as Chancellor (1960-74), he lifted the school from its B class rating to a respected position among the nation's better medical schools. He designed and executed the master plan of development, when there was not a great deal of financing to be had. Through deft alignment with key political figures, he exercised his way with the State Legislature, upon whom he depended for funding.

Dr. Lynch was the first full time professor at the Medical College. Prior to his appointment in 1918, as professor of Pathology, all academic positions in the school were held by physicians engaged in private practice. From 1921 to 1926, he practiced in Dallas, Texas, and returned to Charleston in 1926. He became Vice Dean in 1934, and he exercised control of the school from that date. Although his leadership role began one-third of the way through the 20th Century, he brought the school, sometimes dragging and kicking, into the realities of 20th Century medicine. In

1955, at mid-century, he guided the epochal completions of the Medical University Hospital.^{6, 7}

In accordance with the Flexner Report requirements, he began assembling a full time academic faculty in the clinical departments. The pre-clinical sciences were already served by full time appointees. In 1937, Frederick E. Kredel in surgery, and William Kelly and John Boone in medicine, were the first full time clinical appointees at the school. As budgetary allowances increased, clinical and pre-clinical departments expanded.^{6, 7}

Dr. Lynch was the premier pathologist in the state. He was a consultant to many community hospitals in South Carolina, and was a consultant to a number of federal organizations. His organizational membership and executive roles in many of them were numerous. His bibliography of 120 papers is devoted largely to pathology. He authored one textbook and co-authored two others. Unrelated to pathology, but a definitive treatise on the subject, *Medical Schooling in South Carolina* was published in 1970.

Under Dr. Lynch's direction, a graduate studies program was instituted at the Medical College; a School of Nursing was established. The Pharmacy School was improved. The ultimate establishment of the Dental School was an aim of his master plan.^{6, 7}

His lectures to students evidenced careful preparation, and he discoursed with clarity and command both of the subject and the language. He spoke deliberately and used modifying phrases and allusions that might have led less careful speakers into confusion. His grammatical construction, though complex at times, was impeccable.

As a denouement, Pratt-Thomas has defined the basic quality of Dr. Lynch's leadership role as a medical teacher and administrator. "Kenneth Merrill Lynch, the tough, hard-minded Texan . . . was a well-organized and lucid lecturer, concise and stimulating; he was a friend of the medical students, a constant guardian of their welfare. . . . He never lost sight of the fact that students were the most important component of a medical college."⁸

William Atmar Smith was a premier medical practitioner, esteemed by his patients and respected by his colleagues. He focused upon pulmonary disease in his practice of internal medicine. As a clinical professor of medicine, he was

ASBESTOS EXPOSURE

one of the many able part time faculty members who served the school with distinction. Dr. Smith guided the establishment of Pinehaven Sanatorium for the cure of patients with tuberculosis, and served as its director for many years. "He was a man with a strong sense of right and wrong, highly ethical, a champion of causes. . . . His scientific curiosity was insatiable." Pratt-Thomas related that he obtained more autopsies than any other practitioner.⁸ His scientific curiosity and his abundant knowledge of lung disease resulted in several publications concerning cancer of the lung, pulmonary tuberculosis, and two significant papers with K. M. Lynch—one on asbestosis, and the other relating asbestosis and lung cancer, which is our present concern.⁹

Because of their mutual interest in pulmonary disease, it was natural that these two should have collaborated. Their observation that exposure to asbestos dust could eventuate into lung cancer has proved highly significant. The effects of this report have been extensive and dramatic. It is with pride in their achievement, that we cite this medical first of Lynch and Smith, two honored faculty members of the Medical College of South Caro-

lina who have marched with distinction in medicine's passing parade. □

ACKNOWLEDGMENT

Mrs. Anne Donato, Curator of the Waring Historical Library was, as always, energetically and graciously helpful to me in the preparation of this manuscript. To her I extend my sincere thanks.

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FAY J. TOWELL, M.A.

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Editorials

Dr. John B. DuBose, who has served as Chairman of the Review Committee for SCPRO, had planned a letter to The Journal even before the open letter published in the March issue. In view of the current controversy surrounding SCPRO, it seemed appropriate to publish the following letter as a guest editorial. Guest editorials reflect the opinions of the authors and do not necessarily reflect the opinions of The Journal or the South Carolina Medical Association.

—CSB

SCPRO IN 1988

The congressional mandate for peer review is clear. It started with social security legislation initiating Medicare and Medicaid in 1965, was strengthened by the Bennett amendment to the Social Security Act creating PSROs in 1972 and has continued through the Peer Review Improvement Act which required PRO development in 1982. Due to the prospective payment system enacted by Congress in 1982, the focus for PROs was to reduce certain categories of admissions whereas the focus of PSROs was to reduce the length of stay. The OBRA and COBRA bills of 1985 and 1986 further strengthened existing PRO legislation.

While the rest of the nation endured the cost cutting programs of HCFA and gradually learned to adjust to them, South Carolina physicians and hospitals were left comfortably alone. Some hospitals enjoyed windfall profits in the process. The abrupt entry of SCPRO and its parent, Metrolina Medical Foundation of Charlotte in July, 1986, was greeted with less than open arms and occasionally with outright hostility by many in the medical community. I must admit that even I was suspicious of this new company from North Carolina that won its contract with HCFA over the trusted South Carolina Medical Care Foundation. The Metrolina contract with HCFA is a 40 page document with numerous references to HCFA regulations and a 300 page technical proposal offered by the PRO. It specifies the scope of work required by all PROs and fixes a dollar amount for performing the review over the two years of the contract. There is no provision for bonuses for a high denial rate nor are there any quotas specified. It is abundantly clear to anyone who is

aware of the facts that a high denial rate works hardship on the PRO. High denial rates require intensified review and that costs the PRO more.

The SCPRO staff exists in the main to see that medical records are screened by physician approved criteria and that those records which fall out of those criteria are reviewed by physician consultants who are as closely matched to the attending physician's specialty as possible. The common perception is that the PRO denies a particular admission or identifies a particular quality problem when in reality, it is a physician consultant using his own clinical judgment and not any set of criteria who decides a given case. The quality of the review process rests primarily on the quality of its reviewers. SCPRO has at present 160 trained physician reviewers. To be a reviewer, one must be in active practice on a hospital staff and must have attended one of the physician review seminars conducted by the PRO. A physician consultant must document the reasons for his decision on a particular case. These reasons are reviewed for consistency and validity but the decision of that reviewer on any given case stands unless there is a request for another review or appeal. This process is not perfect but does constitute true peer review.

There has been a learning curve for both the PRO and for the medical community in South Carolina. Physicians are learning to be better at documenting their records and hospitals are learning different ways to bill for outpatient services and interrupted care. Some procedures such as cataract surgery are now being done mainly in the outpatient setting. The PRO is learning who among its trained physician consultants are the

best reviewers and who are not. Reviewers are becoming more familiar with their roles and hopefully are a bit more lenient when it comes to gray areas of utilization and minor quality issues. The lower workload and larger numbers of trained reviewers has enabled the PRO to specialty match the reviewers more easily for utilization determinations. It has always matched specialties for quality issues.

As we approach the end of this learning curve, the denial rate has progressively fallen. The first quarter 1987 denial rate was 9.4 percent which was reduced to 4.0 percent by the first quarter of 1988. Although the current rate is high compared to the national average (2.0 percent), the trend is encouraging. It is worth noting that the denial in North Carolina Medicare review by Metrolina, using the same organizational structure and review format, is down to 1.5 percent which is less than the national average. I have every expectation that the same low denial rate will be achieved in South Carolina. I also think that any peer review organization starting up in similar conditions will have the same experience with higher than expected denial rates at first followed by lower rates as experience is gained by the providers and the PRO. It is in the best interest of the PRO to see that there is a low denial rate in South Carolina. High denial rates mean intensified review and intensified review is expensive. It is also in the PRO's best interest to see that the first review of a record is the best one. A poor review which results in an inappropriate denial or quality issue will nearly always have to be reviewed again at a considerable expense and generates ill will toward the PRO. As you can see by this, there is absolutely no reason for the PRO to influence the physician advisors to be biased toward denying just claims for utilization or finding nitpicking quality issues.

There has been much criticism of the PRO for not responding to the request from physicians to discuss certain cases over the phone. Opportunity is made for written discussions but telephone consultation is more difficult. Our policy of keeping consultant physicians' identities anonymous is part of the problem of arranging for meaningful callbacks. To ease this strain, the SCPRO has hired some physicians from our consultant pool to act as Medical Directors. These physicians are, in the main, near retirement or in similar positions which allow them the considerable time required

to be available for telephone consultation with attending doctors. They are able to explain the review process and obtain additional information from the attending physician which can bear on a given case but cannot themselves make the final decision to approve that case.

Finding the physicians to fill the role of Medical Director has been difficult because of the special qualifications these doctors must have. They must have the respect of their peers and have practiced recently enough to be familiar with current procedures and policies. The PRO will also be using these physicians to help screen records that are sent in by nurse reviewers. They will be able to approve records but will not be able to deny them. Questionable records must still be passed on to physician consultants who are still in active practice.

In May, the PRO will be holding advanced training seminars for some of its established physician consultants. We will be concentrating on developing more consistency among the reviewers, particularly in regards to such sensitive issues as 24-hour observation and stressing the importance of blinding oneself to patient outcomes when considering the appropriateness of attending physician actions given the clinical data available to the attending physician at the time he decided to keep the patient in the hospital or to perform a procedure.

SCPRO is constantly looking for new, qualified physician consultants. In the last two months, SCPRO has received an additional 135 applications from physicians to become consultants. Training seminars for these new consultants will start again this summer. I personally urge every concerned physician to sign up for one of the training seminars which will be held in convenient locations throughout the state. Even if you do not plan to do reviews for the PRO, the information learned will enable you to better understand how one can take care of Medicare patients given the cost cutting restraints required by HCFA. This training should also be mandatory for those of you who serve on hospital Utilization Review Committees and Quality Assurance Committees.

It is to be remembered that the PRO does not make HCFA policy. The requirement to obtain preadmission approval for certain types of surgical procedures and perform focused review

based on length of stay or DRG are HCFA requirements that would be imposed on any PRO organization and are generally applied nationally. It is up to HCFA and the Congress to decide what Medicare will or will not pay for. They have stated that they will not pay for patient convenience. There is provision for considering social factors, however. If you have concerns about these policies, they should be taken up with the regional directors of HCFA or with the South Carolina Congressional Delegation in Washington. These concerns can be best voiced collectively through state and national organizations such as the South Carolina Medical Association, South Carolina Society of Internal Medicine, American Academy of Family Practice, American College of Physicians, American College of Surgeons or the AMA. All of these organizations have had input into HCFA policies and in legislation regarding peer review. Both the AMA and American Society of Internal Medicine have encouraged their membership to become involved with peer review organizations in their respective states. The American taxpayer

working through their elected members of the Congress have demanded from medicine that there be accountability for the huge Medicare expenditures. The Congress has asked organized medicine to perform this function through the peer review process. It is up to the responsible physician to answer this call and work to make the process as fair and equitable as possible. The current system is not perfect and there are bound to be differences of opinion on any issue. The time for bickering, infighting and personal attacks has come to an end. It is now time for true professionalism to emerge as the dominant force in approaching the problems of peer review in South Carolina. To do less can only be harmful to our hospitals and our ability to properly care for our patients.

JOHN B. DUBOSE, M.D.
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PREMATURITY AND BLINDNESS

Because of the improved survival of extremely low birthweight infants, there has been a resurgence of retinopathy of prematurity (ROP) in the United States over the past two decades. With an annual incidence of between 500 and 1,000 legally blind infants per year, ROP is now responsible for approximately 20 percent of blindness among children under five years of age. Pilot studies, both in the United States and abroad, have suggested that cryotherapy may be an effective treatment. For this reason, in 1985, the National Eye Institute began a nationwide, multi-center randomized trial on the use of cryotherapy in the treatment of severe ROP. Preliminary results in 172 randomized babies with birthweight less than 1,251 grams are reported in the April issue of the *Archives of Ophthalmology* and the May issue of *Pediatrics*. The results are impressive. These data show that cryotherapy applied to the avascular retina can arrest progressive ROP and prevent retinal detachment in approximately 50 percent of the eyes that would otherwise be expected to suffer severe visual loss.

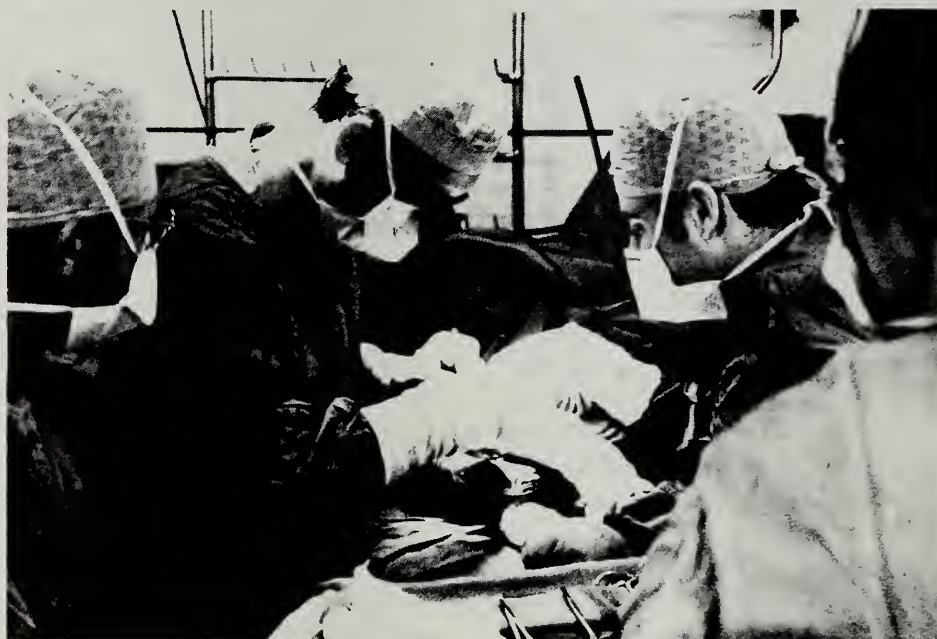
The implications of this study are significant. While longterm follow-up data are not yet avail-

able, it now appears that we have an effective treatment for severe ROP, so long as intervention is undertaken before retinal detachment occurs. Having an ophthalmologist screen infants under 1,500 grams for ROP is imperative and now the nationwide standard of care. These examinations should ideally be performed between six and eight weeks of age by an ophthalmologist with sub-specialty training in retinal diseases or pediatric ophthalmology. It is incumbent upon hospitals and pediatricians caring for low birthweight infants to be aware that ROP is a treatable disease and ensure that every child who is at risk receives the benefit of an ocular examination and appropriate treatment.

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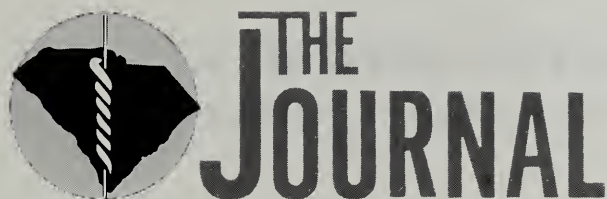
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ADOLESCENT PREGNANCY IN SOUTH CAROLINA

INTRODUCTION

SAMI B. ELHASSANI, M.D.¹
THOMAS W. HEPFER, M.D.²
HAROLD R. RUBEL, M.D.³

The South Carolina Medical Association's Committee on Perinatal and Maternal Health recognizes the problem of adolescent pregnancy in South Carolina. Because South Carolina continuously ranks among the states with the highest perinatal mortality, this committee appointed a subcommittee in the spring of 1987 and charged that subcommittee with the preparation of a dedicated issue of *The Journal* dealing with the problems associated with adolescent pregnancy in South Carolina. Since the spring of 1987 six authors have focused on the social and medical issues related to adolescent pregnancy.

This subcommittee and its contributing authors would like to thank the Perinatal and Maternal Health Committee for supporting us in this endeavor. In addition, we would like to thank *The Journal* Editorial Board for their technical support and advice in the preparation of this issue. The subcommittee would also like to thank Planned Parenthood of Central South Carolina for assistance in dealing with the legislative issues.

Doctors Gabel and Hepfer have compiled an overview of the statistics pertaining to teen pregnancy. In addition, their article discusses the socioeconomic factors affecting sexual decision making in teens and the consequences of that behavior.

Dr. Elhassani reports on both the relationships between adolescent pregnancy and the high neonatal mortality in South Carolina and the role of adolescent pregnancy in contributing to both neonatal and infant mortality rate. Because adverse perinatal outcome for adolescent mothers is amenable to clinical intervention, emphasis should be placed on programs to prevent prematurity.

In a convincing report, Doctors Rubel and Baughman demonstrate the impact sex education in the school system has on reducing the teen pregnancy rate in Spartanburg County.

Dr. Heins and his co-authors present a form of social support to improve perinatal outcome. The Resource Mother is a health-informed worker who serves as an advocate for the adolescent teen. This program is effectively reducing the perinatal mortality in the Pee Dee area.

Nancy A. Raley, Executive Director of Planned Parenthood of Central South Carolina, discusses the options available to pregnant adolescents and addresses current legislative issues related to this topic. □

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TEENAGE PREGNANCY: AN OVERVIEW

I. EPIDEMIOLOGY

HAROLD D. GABEL, M.D., M.P.H.*

In the United States, over 13 million teenagers are sexually active. On the average, teenagers begin sexual activity at about age 16. The number of teenagers who are sexually active increased by two-thirds over the 1970s and shows no signs of declining. The inevitable result of this sexual activity, if appropriate intervention is not introduced—is teen pregnancy. Currently, in the United States about one million teenagers become pregnant each year.¹

The teenage pregnancy rate in the United States is the highest in the developed world.² This problem has reached crisis proportions with serious consequences for the individual and society as a whole.

In this introductory article, epidemiologic data related to teen pregnancy in South Carolina is presented. With this as a background, other aspects of the problem such as its etiology, its consequences (medical, social, and economic) and finally what can be done in the area of prevention may be better understood.

The data presented in this section provided by the South Carolina Department of Health and Environmental Control³ will be descriptive of young women 14 to 17. This grouping more accurately identifies those girls at highest risk. Children under 14 and women over 18 represent a different risk group both medically and socio-economically.

In the year 1980, there were 6,078 pregnancies to girls aged 14 to 17 and 5,359 pregnancies in 1986. There is an apparent decline of 12 percent between the two years. This decline has been slow, but steady. Still 5.2 percent of teens in that age

group became pregnant in 1980 and 5.1 percent became pregnant in 1986.

Induced abortion accounted for 29 percent of pregnancies in 1980 and 37 percent in 1986. Since out-of-state abortions were not reported in 1980, that figure may be underreported.

In the year 1986, in South Carolina, there were 3,351 live births to teens aged 14 to 17. This represents a decline of 881 births since 1980. In 1980, 3.6 percent of all females, aged 14 to 17 had a live birth. In 1986, it was 3.2 percent. The decrease in teen births is due primarily to an increase in induced abortions.

In 1986, the birth rate for whites was 21 per 1,000 girls 14 to 17 and the rate for nonwhites was 49. Those rates were 22 and 59 respectively in 1980. Although the decrease in the rate for nonwhites has been impressive since 1980, in both 1980 and 1986, nonwhites accounted for 60 percent of the total births and whites accounted for 40 percent.

Although there were 2,424 out-of-wedlock births in 1986, 432 fewer than in 1980, the out-of-wedlock percentage increased from 67.5 percent in 1980 to 73.8 percent in 1986. This increase is the result of an increase in white (28 to 43 percent) out-of-wedlock births since the nonwhite percentage has remained essentially unchanged at 92 percent since 1980. □

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TEENAGE PREGNANCY: AN OVERVIEW

II. CONSEQUENCES—MEDICAL, SOCIAL AND ECONOMIC

HAROLD D. GABEL, M.D., M.P.H.*

MEDICAL CONSEQUENCES

Although the average American girl reaches physiological maturity by age 15, the incidence of medical complications of pregnancy for both mother and baby is high.

While maternal mortality rates are relatively low in the United States, they are highest for the young adolescent.¹ Mothers, under age 15, experience a rate of maternal death two and one-half times that of mothers aged 20 to 24. Teenage mothers are 15 times more likely to suffer from toxemia; 92 percent more likely to have anemia; and 23 percent more likely to experience a premature birth than mothers in their early twenties.² These risks are much greater for poor and non-white teenagers; and, the younger the mother, the higher the risk.³

To further complicate pregnancy, teens are often exposed to and contract sexually transmitted diseases, such as chlamydia and gonorrhea.⁴ They often experience early subsequent repeat pregnancy, with its inherent medical risks, made even worse due to a shortened interpregnancy interval.⁵

It is well documented that most teens receive inadequate prenatal care or none at all. In fact, about 65 percent of the girls do not see a physician until the last trimester and an additional 25 percent receive no prenatal care at all.^{6, 7} Clear evidence exists that pregnant teens often have an inadequate diet which is deleterious to their own growth, as well as for the development of the fetus.⁷

The high incidence of complications of pregnancy is not inevitable. When excellent perinatal care is available which includes social work services, childbirth education, and nutrition supplementation with counselling; optimal pregnancy outcomes can result. Outcomes are even better when prenatal care is begun early in pregnancy

and continues for the entire gestation.^{8, 9} Special mention should be made of clinics devoted to the comprehensive care of pregnant teens, as optimal outcomes have been demonstrated.⁴

Babies born to teens are up to two times more likely to be preterm, to be of low birth weight^{1, 2, 3} and to die within the first month and first year of life.¹ Low birth weight is associated with neurologic defects, such as cerebral palsy, epilepsy, and mental retardation.^{2, 4} Here too, the younger the mother, the greater the risk.²

It is also well documented that a baby born to a young single mother, who raises the child alone, is worse off in terms of physical health than those babies raised by the teenage mother and father or the teen mother and her mother or grandmother.⁹ The child of a teenager is also at increased risk for being abused.^{10, 11}

Many of these conditions can be prevented with high quality child health care supplemented with appropriate child care education for the mother and nutrition for the child.

SOCIAL CONSEQUENCES

Although the overall teenage birth rate in South Carolina, as well as throughout the United States, is declining, the social consequences are not.

More than two-thirds of births to teenagers 14 to 17 are out-of-wedlock in South Carolina as well as the rest of the country.^{12, 13} This percentage has increased, not as a result of more out-of-wedlock conceptions, but because fewer out-of-wedlock conceptions result in marriage. In 1960-64, nationally, 64 percent of out-of-wedlock conceptions resulted in marriage. In 1970-74, only 35 percent ended with marriage.¹³ Since the early 1970s, even fewer out-of-wedlock conceptions result in marriage.¹²

Researchers have repeatedly found that marriages begun during the teen years are highly unstable.^{14, 15} Three in five teen marriages are likely to result in separation or divorce within six years.¹²

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TEENAGE PREGNANCY: CONSEQUENCES

Early childbearing is strongly associated with higher levels of completed fertility, closer spacing of births, more out-of-wedlock births, and higher proportions of unwanted children.¹⁶

Young women today are likely to remain single and 90 percent keep their babies.¹⁷ Teens who have given birth frequently do not return to school. Of school-age mothers 17 and under, eight of every ten do not complete high school.¹² The result is an overall lowered level of educational attainment. The availability of homebound education can help a motivated pregnant teen to maintain a grade level comparable to her peers. However, the best alternative is to keep the student in her school for the duration of her pregnancy and encourage a speedy return to school postpartum, with homebound education utilized for only a short period.

Children born to teenage mothers score lower on IQ tests than children born to women in other age groups. Baldwin¹⁸ reported that the socioeconomic status of the mother was closely linked to her child's cognitive test scores. One study¹⁹ found that children of teen mothers who were financially disadvantaged performed poorly in school compared to those more economically secure teenage mothers. One long-term study⁹ showed that daughters of teenage mothers are at higher risk of becoming teenage mothers themselves.

ECONOMIC CONSEQUENCES

Early childbearing is associated with many problems for the young parent or parents and their families including, for some, long term poverty and prolonged dependency on the welfare system.²

Although individual differences such as family background and race influence the attainment of women and their families, early childbearing appears to have an independent negative effect, over and above these factors, in reducing the economic attainment for the mother and her family.²⁰ In fact, families headed by teenage mothers are seven times more likely to be poor.²¹

Since early first birth is associated with larger family size and less educational attainment, it has a direct effect on labor force participation and earnings. A larger family size is associated with less work experience, fewer work hours of employment in the previous year, lower earnings, lower income on the part of the other family

members, and consequently a greater probability of poverty.²⁰

The presence of young children can also undermine achievement of self-support because of the difficulties and/or expense associated with child care. Child care constraints that interfere with employment are most common among young mothers, blacks, unmarried mothers and high school dropouts.²²

In addition, the type of employment available to these young mothers usually does not offer comprehensive health insurance so necessary to workers with children.¹⁴

Since welfare benefits increase with each child, some women find it impossible to locate a job that provides significantly more income than public assistance, especially if they lack education or experience.

A woman who bears a child while in her teens is much more likely to become dependent on welfare assistance than the woman who postpones childbearing.¹⁵ Teen mothers are disproportionately represented among recipients of Aid to Families with Dependent Children (AFDC). In South Carolina, in 1986, 56 percent of mothers receiving welfare were under 20 years of age or had been mothers before the age of 20.²³

AFDC is only one type of welfare benefit. Eligible families may also collect food stamps, day care, school lunch, housing subsidy and legal subsidies.¹³

Since AFDC recipients are automatically eligible for Medicaid, teenage childbearing is also associated with Medicaid expenditures.²⁰ Medicaid benefits include maternity and pediatric costs associated with birth as well as first year well baby examinations.

WIC (Women, Infants, and Children Supplemental Nutrition and Nutrition Education Program) benefits are available to pregnant women, infants, and children who are at nutritional risk and are considered a medical cost.¹³

Studies have used the cost of welfare and medical benefits to estimate the public cost of teen childbearing.¹³ The costs are then projected over a 10 to 20 year period on the basis that most teen mothers remain on welfare for at least that period of time.

For all teenage births, the first year medical costs in South Carolina, in 1981, were \$5.9 million, the welfare benefits were \$7.2 million, and the total of these costs was \$13.1 million. The public

TEENAGE PREGNANCY: CONSEQUENCES

cost per teen was \$5,349. The total projected cost for the 10 year period was estimated at \$90.6 million or \$36,853 per teen live birth.¹³ By 1984, those costs had risen to \$126.9 million for the 10 year period.²³ These dollars are spent year after year. This estimate represents public dollars committed by current program regulations and eligibility criteria.

In a 1985 study, for the United States as a whole, using similar methodology, a figure of \$17,724 per live birth, per teen aged 15 to 17, was derived based on more restrictive welfare eligibility criteria. The cost to the United States for a twenty year period was estimated to be \$5.2 billion.²⁴

In summary, a teenage pregnancy writes a life script for poverty and welfare dependency. Costly consequences such as poor infant health, retarded personal development, lost potential and the perpetuation of the cycle in the next generation are common. Every effort should be made to prevent teenage pregnancy which is a societal as well as an individual problem. □

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TEENAGE PREGNANCY: AN OVERVIEW

III. ENVIRONMENTAL AND EDUCATIONAL INFLUENCES

THOMAS W. HEPFER, M.D.*

As early as the late forties, the social science literature is inundated with articles about teen pregnancy, its incidence, cause and proposed methods of prevention. These studies isolated many variables for a teenager at "high-risk" for pregnancy. These factors or variables were derived from data that show a positive correlation between them and teen pregnancy. Before discussing the epidemiology of teenage pregnancy, there are several words of caution which should be mentioned. First, the data from which these correlates are obtained are often not prospective, have insufficient emphasis on males, overemphasize blacks and clinic populations and are, at times outdated.¹ Secondly, the way teens are grouped may cover up certain factors, for what is true for a 13-year-old may be completely different for an 18-year-old. Also, what is true for blacks may be different for Mexican-Americans or for whites.²

In the simplest of terms, the teen pregnancy rate is directly related to the frequency of unprotected sexual intercourse in the fertile teen female, so that any factor which affects the likelihood or frequency of sexual intercourse or the use of contraception in those sexually active teens will also have some effect on the teenage pregnancy rate. In reviewing the more recent literature and noting the above warning, there are some common findings which seem to stand out. These common variables or factors are grouped into socioeconomic, family, personal and educational influences. Any programs designed to reduce teen pregnancy rates must address each of these groups, determine what is alterable within each group and cost-effectively alter it. What follows is a discussion of these grouped influences and some programs which have been designed to reduce the teen pregnancy rate.

SOCIOECONOMIC INFLUENCES

Distribution of income seems to play an important role. Jones and her colleagues correlated high teen pregnancy rates with high inequities in the

distribution of income when she studied 37 developed countries. The United States had one of the highest teen pregnancy rates and also had one of the smallest proportions of total income distributed to the lowest 20 percent of the population. Economically disadvantaged teenagers, especially teens of racial or ethnic minorities, are at high risk for teen pregnancy, particularly early teen pregnancy.³ Low income and few prospects for future success promote a feeling of powerlessness that undermines "the rationale for effective contraceptive use."⁴

Many have alleged that government assistance programs promote promiscuity and increase the incidence of teen pregnancy. Moore and Caldwell, however, compared various state statistics and could not associate easy acceptance or "generous" benefits to a greater incidence of pregnancy in teens.⁵ When compared to other countries, Sweden, which has a social welfare program with more benefits, also has a lower pregnancy rate.

The media, especially television, too often glamorize adolescent sexuality.⁶ In fact, what we label today as teenage sexuality is really a "modeling of adult behavior in American Society"⁴ as portrayed by the media.

Biologically, the age of adulthood has fallen but in an industrialized society "social adulthood" is obtained later, following training and skills to establish and maintain a job. The United States deals with this poorer than most. The rates of childbearing and abortion remain higher than the majority of developed countries in the world. This is true even though the age of initiation and the rates of early sexual activity are comparable. The most striking difference is in the less than 15 age group where a five-fold increase in births exists among these young adolescents in the United States when compared with any other developed countries.⁷

FAMILY INFLUENCES

A stable family structure seems to be an important deterrent of sexual activity and therefore teen

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TEENAGE PREGNANCY: INFLUENCES

pregnancy. American family life has undergone a significant transformation in the last two decades. An increased rate of divorce, increased rate of single parent homes and an increase in working mothers has indeed paralleled the rise in early teen pregnancies.⁶ After controlling for other variables, teens of single parent households had a higher pregnancy rate than teens in a two-parent household. Kantner and Zelnik found that teens coming from an intact family were less likely to initiate sexual activity early. The ability to communicate with parents about sex and sexual matters was associated with a lower prevalence of sexual activity. Teens of parents with "significant hostility" in their marriages were at higher risk for pregnancy, as were teenagers who were dissatisfied with their mothers as role models. The father's educational level plays a role. Kantner and Zelnik found that teens of less educated fathers would initiate sex at an earlier age.⁸

Landy's review of the literature finds families of unwed pregnant teens are "mother-ridden" with a passive father to whom the teens are not close.⁹ Family size may make a difference. In a review of black adolescent behavior, Hogan and Kitagawa found that teenage girls growing up in large families would begin sexual activity at an earlier age and were more likely to become pregnant.¹⁰ Friede et al found that childbearing was increased in young teenagers who were living in a household with a pregnant sister. He concluded that these teens had a two-fold increase in pregnancy and would benefit from an outreach program.¹¹

The educational level of the mother did not correlate with either age of onset of sexual activity or risk of pregnancy but the mother's occupation did. With the increase of employed mothers, Zelnik reported that more homes were "reliably vacant at the right time." Reporting on the "Geography of Sex," Zelnik found three quarters of the teenagers had their first intercourse either in their home or the home of their friend. Forty percent of teens have their first intercourse during the summer.¹² This same author speculates that an upsurge of employed women has decreased their own fertility while increasing the fertility and sexual activity of their children.

The literature is not always consistent. Items that did not always relate to pregnancy rates included: father's age, occupation and education; mother's age and education; number of brothers

and religious preference. Also, Townsend found no difference in mother-daughter relationships between pregnant and non-pregnant adolescents.¹³

PSYCHOSOCIAL INFLUENCES

Despite all of the generalizations, the decision to become sexually active is often a very personal one, based at times more on feelings rather than reason. Self-esteem is the most frequently mentioned psychological variable. Goldfarb, Abernathy, Zongker and Kaplan all found a relationship between low self-esteem and an increased risk of teen pregnancy. One prospective study by Vernon could find no difference in pregnancy rates between low, mid or high scores on the Coopersmith Self-Esteem Inventory.¹⁴ What one feels about oneself has a lot to do with whether they become sexually active or not. Those teens with greater feelings of inadequacy, or who view peer or school experiences as degrading may use sexual activity as a means of gaining acceptance.

Poor academic performance, low educational goals and attainment positively correlate with teen pregnancy. Poor vocational prospects for the future create a powerlessness that undermines the rationale for preventing pregnancy. Low religiosity, drug or alcohol abuse, desire for affection, desire for a cherished companion, passivity and dependency are all personal factors associated with an increase in risk of pregnancy.

Having been pregnant is a risk factor by itself. Twenty percent of teen mothers (regardless of the race or ethnic background) become pregnant within 12 months, 38 percent within two years and 50 percent at the end of 36 months.³ Menarche and age of first intercourse are also positively related to the occurrence of pregnancy. "Those who begin sexual activity in the early teens are not only at greater risk of pregnancy over time but are also disproportionately more likely to conceive in the first six months after initiation of intercourse."¹² Young teens are less likely to use contraception at first intercourse than older teens. Stafford reports a dramatic increase in the pregnancy rate in girls 13 to 15 years old despite a decrease in pregnancy for teens overall.¹⁵

EDUCATION

Sex education, specifically in the public schools, has been the most widely studied single factor

TEENAGE PREGNANCY: INFLUENCES

affecting teenage sexual, reproductive and contraceptive behavior. Sex education is the major component to most pregnancy prevention programs.

But all sex education courses are not alike. The content varies from a mere disclosure of the biological facts to addition of role-playing, contraceptive information to discussion of technique! Zelnick and Kim reported on two large studies from the National Institute of Child Health and Human Development, and their remarks are confined to teens living in metropolitan areas. Seventy-five percent (75%) of teens had sex education and 80 percent of these had some information on contraception. Only ten percent had semester long courses.¹⁶

Teens exposed to sex education courses were no more likely to have sexual intercourse than those who had not had courses. These teens were less likely to get pregnant, more likely to use contraception but not more likely to use contraception every time.¹⁶ Sex education had a weaker influence than peer pressure so was less likely to affect sexual activity in those with many sexually active friends.¹⁷

Timing the sex education courses has always been difficult, for women mature at different ages, "so what is inappropriate for some is too late for others." Indeed, higher pregnancy rates have been associated with later sex education.¹⁸ Lucinda Thomas studied the long term retention for high school students and found good retention for eighth and ninth grade students. In Sweden, courses begin at the fifth grade level and continue yearly. The timing may not only depend on the average age of sexual maturity but the content, duration and repetitive nature of the course.

A thorough sex education course should not only include the biological information but also include behavioral training, including decision-making (especially support to delay sexual activity), goal setting, values exploration, and sex and gender roles. These courses should supplement rather than usurp parental influence on teenagers.¹⁷ Also programs that link sex education and employment planning have been more effective.¹⁹

After a two-year study, the Panel on Adolescent Pregnancy and Childbearing reached six general conclusions:

1. Prevention should receive highest priority.
2. Sexually active teens need the ability to avoid pregnancy and the motivation to do so.
3. Society must not treat adolescent sexuality as a problem peculiar to teenage girls.
4. Teens need the ability to make and carry out responsible decisions about their sexual behavior.
5. Priority should be given to young adolescents and the socially and economically disadvantaged.
6. The responsibility for addressing the problems should be shared among families, voluntary organizations, communities and government. Public policy should affirm the role and responsibility of families to teach human values.⁷

Many intervention programs are already in place to address most if not all of these needs; and although there is no coherent U. S. policy to address adolescent pregnancy, many states, including South Carolina, recognize the need for these programs and are supporting them. □

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ADOLESCENT PREGNANCY AND NEONATAL DEATHS*

SAMI B. ELHASSANI, M.D.

*"My salad days, when I was green in judgment,
cold in blood"*

—William Shakespeare (1564-1616)
Antony and Cleopatra, 1, V, 73

At 28 weeks gestation, a 14-year-old gravida 1, para 1 junior high school girl with no prenatal care delivered a 1,100 gm infant. Apgar scores were two and five at one and five minutes respectively. Because of severe respiratory distress due to hyaline membrane disease, the patient was intubated and placed on mechanical ventilation. After 64 days of intensive, and intermediate care, the infant was discharged from the hospital to be seen in the followup clinic for neonatal intensive care graduates. The total cost of hospitalization was \$65,000.

A 16-year-old gravida 3, para 1, ab 1 was admitted to the hospital because of premature labor and ruptured membranes. Estimated gestation by history and ultrasonography was 33 weeks. Workup in the hospital revealed a positive RPR and chlamydiazyme tests. There was a history of heavy cigarette smoking in addition to alcohol and drug abuse before and during pregnancy. Forty-eight hours after admission, a 1,350 gm infant was delivered. The infant was apneic and hypotonic with a heart rate of 60 per minute. Apgar scores of one and four were assigned at one and five minutes respectively. The infant's trachea was intubated in the delivery room followed by administration of mechanical ventilation in Neonatal Intensive Care Unit. After a septic workup was done, appropriate antibiotics were given parenterally. The infant's condition deteriorated rapidly despite high ventilator settings and aggressive management of septic shock. Group B beta hemolytic streptococci was isolated

in blood culture. The baby expired after five days of hospitalization.

The two aforementioned patients are among the most common admissions to neonatal intensive care units (NICUs) across the country (Figures 1 and 2 show a very low birth weight infant and a typical NICU bed). To fully understand the association between adolescent pregnancy, prematurity and neonatal mortality, it is necessary to define the factors involved in such a relationship. After analyzing data collected from 562,330 born in the United States to teenage mothers (19 years of age or younger) in 1980 by the National Infant Mortality Surveillance, Frieda, et al confirmed the previously observed relationship between young maternal age, low birth weight, and increased infant mortality.¹ In addition to being a determinant of infant mortality, low birth weight is also a major cause of neonatal mortality as well as developmental retardation among those who survive.²

One of the best indices of socioeconomic status of a community or a country is infant mortality rate defined as the number of deaths at less than one year of age per 1,000 live births. Since the beginning of the century, there has been a steady decline in infant mortality in most developed countries. In 1986, infant mortality rate in the USA was 10.4 per 1,000 live births compared with 100.5/1,000 in 1915. Also in 1986, among the developed countries of the world, the US mortality ranked 14th in infant mortality. While a decline in infant mortality rate is a reflection of improvement in health programs in the first year of life, neonatal mortality rate defined as the number of deaths at less than 28 days of life per 1,000 live births is an index of the level of obstetrical as well as early neonatal care.

In 1985, among the 50 states and the District of Columbia, South Carolina ranked 48th in both infant mortality and neonatal mortality (14.2/1,000 and 10.0/1,000 respectively).³

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ADOLESCENT PREGNANCY AND NEONATAL DEATHS



FIGURE 1. A 480 g infant.

While the United States teenagers have the lowest rate of contraceptive use, they have the highest rates of pregnancy, abortion and birth among the industrialized countries;⁴ thus the high fertility rate among the very young teenagers (10-14 years) in both the United States and South Carolina. Fertility rate is defined as the number of live births born to 1,000 adolescent pregnancies. Table I shows the total South Carolina fertility rate among the very young teenagers 1.5 times that in the United States. The disparity in fertility rates is along racial line in both the United States and South Carolina with 6.16 times in nonwhite than in white population nationally compared with 7.6 in South Carolina.

TABLE I

1984 (FERTILITY RATE)

Age	Region	White	Nonwhite	Total
10-14 yrs.	SC	0.5	3.8	1.8
10-14 yrs.	US	0.6	3.7	1.2

In addition, South Carolina neonatal mortality among infants delivered by teenagers less than 18 years of age is 1.68 times that in mothers older than 18 years, with almost twice the rate in non-white than in white population (Table II).

Prematurity is a condition of multifactorial causes. Factors known to occur more frequently with delivering a low birth weight infant to a teenage mother include low socioeconomic status, poor nutrition, increased substance abuse, chemical dependency, specific life style and late or no prenatal care. Because most infant deaths occur

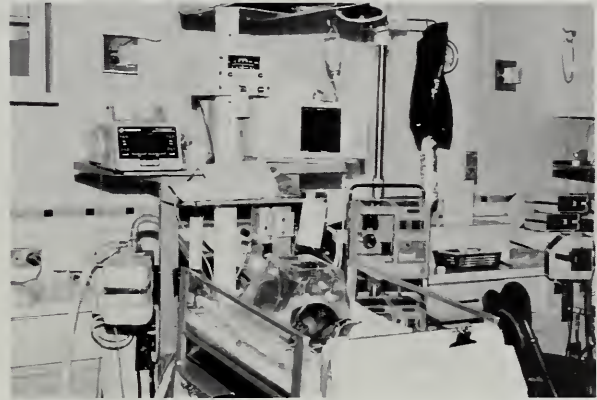


FIGURE 2. A typical neonatal intensive care unit bed.

TABLE II

SC 1985 PER 1,000 LIVE BIRTHS*

Race	Age	LBW	Neonatal Mortality
White	<18	82	10.9
	>18	57	6
Nonwhite	<18	142	19.4
	>18	126	15
Total	<18	119	16
	>18	83	9.5

* Prepared by the Office of Vital Records and Public Health Statistics, S. C. Department of Health and Environmental Control, February, 1988.

among the low-birth-weight infants during the neonatal period, appropriate measures should be taken to decrease the number of premature births by organizing a premature birth preventive program. Such a program should include education of both medical personnel as well as the public and the availability of prenatal clinics and hospitals.

RECOMMENDATIONS

One of the main goals of preventive pediatrics is the reduction in the rate of both neonatal as well as infant mortality. Recommendations to reduce the number of LBW infants delivered by adolescent women are based on the following current information:

ADOLESCENT PREGNANCY AND NEONATAL DEATHS

1. Premature labor is associated with an increased incidence of perinatal morbidity and mortality.
2. While the pharmacologic inhibition of labor is largely a successful line of management, it has no major impact on prematurity rate.
3. Achieving a lower neonatal mortality rate is linked with improvement of prenatal care which in turn is indirectly responsible for lowering prematurity rate.
4. Although some of the causes of preterm labor remain largely unknown, there is ample evidence that one of the causes is adolescent pregnancy.
5. Neonatal deaths associated with prematurity in teenage pregnancy have been considered preventable with providing adequate family planning services to reduce unwanted pregnancies, and renewing efforts to provide teenagers with adequate prenatal care.
6. Encouraging prenatal and postpartum nurse home visitation. In a randomized trial of comprehensive prenatal services, Olds, et al concluded that young adolescents who were visited by nurses gave birth to newborns who were an average of 395 g heavier, and women who smoked and were visited by nurses exhibited a 75 percent reduction in the incidence of preterm delivery.⁵
7. Specially targeted for major educational and preventive services are the very young pregnant adolescents (<15 years old) since the chances of prematurity in their infants are two and one-half times more common than those of women 25-29 years old.⁶ Of particular note in such a high risk population are the potentially treatable risk conditions including poor nutrition, substance use, and genital infections.⁷
8. Through school and community-based education, Vincent, et al⁸ was able to reduce adolescent pregnancy in one county in the western portion of South Carolina. Such intervention

included emphasis on development of decision-making and communication skills, self-esteem enhancement and understanding human reproductive anatomy, physiology and contraception.

Pediatricians, obstetricians, public health personnel, epidemiologists and government health agencies are all involved in early teenage pregnancy prevention programs. Prematurity rate should be kept at the lowest acceptable level, thus decreasing both neonatal and infant mortality.

SUMMARY

The role of adolescent pregnancy in contributing to both neonatal and infant mortality rate is well documented. A vast amount of study over the past several decades has finally provided insight into many aspects of the relationship of teenage pregnancy, prematurity rate and neonatal mortality. Because adverse perinatal outcome for adolescent mothers is amenable to clinical intervention, emphasis should be placed on developing prematurity preventive programs. □

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THE IMPACT OF A COUNTY WIDE SEX EDUCATION EFFORT ON ADOLESCENT PREGNANCIES IN ONE SOUTH CAROLINA REGIONAL MEDICAL CENTER

HAROLD R. RUBEL, M.D.*

OTIS LEE BAUGHMAN, III, M.D.**

BACKGROUND

It has become apparent that teenage pregnancies have become one of the more important problems in the American society.¹ One in ten women ages 15-19 had an abortion or a birth in 1981.² The pregnancy rate for mothers 15-19 years of age increased 10.5 percent from 1974 to 1980. These rates are among the highest in the developed world and South Carolina is one of the perennial leaders in this country.³

In addition to the well-recognized social problems associated with this situation, specific medical consequences have also become apparent. An increase in congenital malformations, increased numbers of low birth weight babies, and an increase in perinatal death rates have all been reported among the infants of mothers 17 and younger.⁴ Of course socioeconomic factors, race, marital status and the influence of prenatal care are other elements which are recognized as contributing to this overall picture.⁵ Low birth weight seemed to be most clearly associated with decreased maternal age in most of these studies.^{4, 5} As mentioned earlier, South Carolina ranks as one of the states with the highest incidence of adolescent pregnancies. The most recent survey placed us 18th among the 50 states.⁶ Our national ranking in terms of perinatal mortality has been even more dreadful as only two or three other states ever exceed us in this category.

THE SITUATION IN SPARTANBURG COUNTY: 1976 TILL PRESENT

I. School Based Sexual Education Before 1976

Prior to 1976 there was no formal sex education per se in any of the Spartanburg County schools. As was true for much of the state, all that was taught, if anything, was that contained in the appropriate section of the health/science curriculum and some home economics/family life classes. Few teachers were available who had received any formal sex education training. Occasional visits by county health department personnel, nurses, and rarely a physician, were the only additional support received. Even this had to be sought on an individual basis by instructors or schools that wanted this assistance.

II. Adolescent Pregnancy

Spartanburg Regional Medical Center (SRMC) is a 584-bed, county-owned, tertiary care center accepting complicated obstetrical cases for care from a three county catchment area. The senior author has been director of the high risk obstetrical service at SRMC since 1972. In this capacity he was painfully aware of the large number of births to *very* young adolescents, i.e.; 12 to 16 years of age. These patients accounted for approximately nine percent of the total deliveries done at SRMC (Table I). Note our data excludes 17-year-olds.

III. Docs Oughta Care (DOC) in Spartanburg County 1977-1982

Docs Oughta Care is an international organization of concerned primary care physicians established in 1977 by Alan Blum, M.D., a family medicine resident, in Miami, Florida.⁷ He was soon joined by Rick Richards, M.D., from the Family Medicine Center in Spartanburg, South

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IMPACT OF SEX EDUCATION

TABLE I

Year	Number of Students (estimated)
1977	600
1978	2000
1979	3000
1980	3600
1981	2800
1982	1200
1983	400
1984	300
1985	300
1986	300

Carolina. Together they established this voluntary organization that is based on the premise that the majority of human suffering is self-induced because of unhealthy lifestyle choices. By using physician manned teams and innovative audiovisual materials they postulated that young people could be educated about their bodies, their health, and the adverse effects of a self-destructive lifestyle. This process could perhaps assist their critical thinking skills and help reverse negative peer pressures upon them.

The problems of alcohol and drug abuse, tobacco products use, and teenage sexual activity were the major focus of this effort. Family Medicine residents developed slide and poster presentations which focused on the advertising industry, popular media and peer pressure techniques that made these lifestyle choices seem attractive. Humorous health fact cartoons were put in the local newspaper in 1978-1979. Using humor and parody with a scattering of cynicism, the physician teams would present factual information and establish a dialogue using a question and answer format to encourage audience participation. A critical examination of common media techniques using sexually provocative images to alter adolescent thinking and decision making was an integral part of the presentation.

IV. DOC and Sex Education in Spartanburg County

In 1977 teams of male and female family medicine residents from the Family Medicine program at Spartanburg Regional Medical Center developed slide presentations specifically dealing with human reproductive anatomy, venereal disease

risks and consequences, as well as pregnancy prevention. Factual presentations were used that avoided overt scare tactics or heavy moral overtones. The concepts of respect for self and others, independent thinking, a positive self image, and understanding peer pressures were central themes. The classes were separated into male and female groups with an individual of the same sex serving as the instructor of each. The discourse occurring in these "break out" groups was animated and extremely productive.

Letters announcing the availability of these physician teams were sent to all Spartanburg County schools in the fall of 1978. Junior and senior high schools in the four largest of seven school districts requested visits by the teams. There was no appreciable parental, school or community reaction or criticism to these presentations. Post-presentation evaluations by students and faculty alike were positive. As the reputation and community awareness of the DOC program grew, so did the number of students reached (Table I). The vast majority of the students were in the 13- to 17-year-old group.

Unfortunately because of a lack of resident interest and leaders, the enthusiasm for the DOC presentations decreased after 1980 and stopped altogether from 1982 to 1985.

V. Apparent Effects of this Program on Adolescent Pregnancies at SRMC

A prompt and very noticeable effect was observed on the number of very young adolescents (less than 16 years of age) delivering babies at SRMC. A decrease from the usual nine percent to slightly over four percent of the total number of deliveries was seen within two to three years of the initiation of this program. This reduction persisted even beyond the decline of the DOC program though some slight recidivism was noted as the peak of the effort passed (Table II). A graphic portrayal of this relationship can be seen in Figure I. No analysis was attempted but our impression was that the greatest impact was on the 14- and 15-year-old group.

CONCLUSION

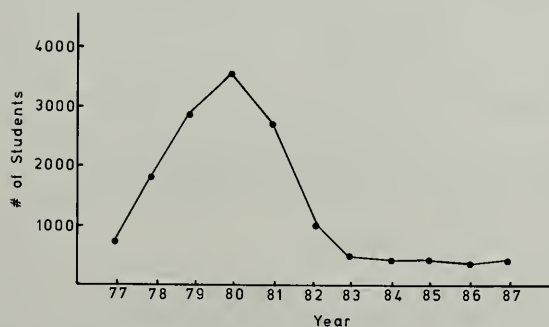
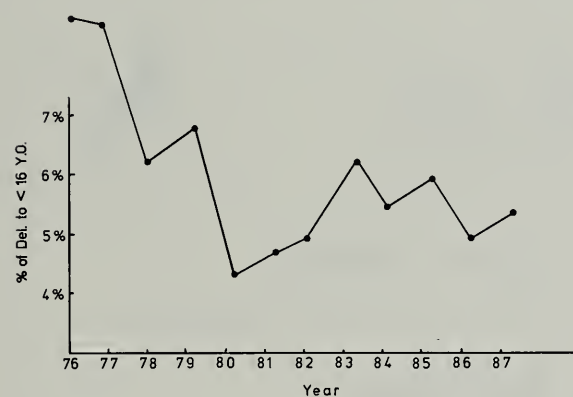
The factors contributing to the problem of adolescent pregnancy are multifaceted and complex. Surely a certain number of them are completely unpreventable and a "core" group will always be with us. We do believe however, a "swing" group

TABLE II

1976-1986

Year	Age					Deliveries/Teens	
	16	15	14	13	12	Year Totals	%
1976	90	43	18	5	0	1735/156	9.0
1977	100	48	21	3	1	1950/173	8.9
1978	71	36	9	3	0	1912/119	6.2
1979	88	45	15	0	0	2201/148	6.7
1980	55	30	10	2	0	2313/97	4.2
1981	57	31	11	2	1	2245/102	4.5
1982	59	27	13	2	0	2167/101	4.6
1983	71	34	14	6	0	1991/125	6.2
1984	65	30	12	3	0	2041/110	5.4
1985	70	41	14	1	0	2147/126	5.9
1986	63	25	9	5	0	2157/102	4.8
11 Yr. Total	789	390	146	32	3	22,859/1359	5.9

FIGURE I



exists that can be favorably impacted by providing sex education on an extensive basis in one community as we did for several years. Some authors have made similar observations^{8, 9, 10} but others feel sex education plays little or no role in influencing teenagers' decisions to engage in sexual activity.^{11, 12}

Our observations would tend to confirm the work of Vincent et al., who also reported a significant drop in adolescent pregnancies in a South Carolina community where extensive community education and intervention was carried out.¹³ Surely a need exists for further studies of this type to clarify this urgent question for our educators. □

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IN MEMORIAM

Warren S. Smith, M.D., a surgeon from Walterboro, died on May 14, 1988. Dr. Smith was a graduate of The Citadel and the Medical University of South Carolina. He was an Honorary member of the SCMA.

Roland W. Penick, M.D., a pediatrician from Greenville, died on April 27, 1988. Dr. Penick was a graduate of Emory at Oxford, University of Georgia, Vanderbilt University and the Medical College of Georgia. He was an active member of the SCMA.

Those wishing to make Memorials in honor of their deceased colleagues may do so by sending contributions to the S.C. Institute of Medical Education and Research, P.O. Box 11188, Columbia, SC 29211.



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THE RESOURCE MOM—A PROGRAM OF SOCIAL SUPPORT FOR PREGNANT TEENS

HENRY C. HEINS, JR., M.D., M.P.H.*
NANCY W. NANCE, C.N.M., M.S.N.*
GENEVA LEVEY-MICKENS, M.S.W.**

For decades South Carolina has consistently ranked among those states reporting the worst infant survival.¹ A significant component of the problem is adolescent pregnancy.² Pregnant adolescents are at greater risk for low birthweight infants, increased infant morbidity and mortality, and babies with delayed development. These indicators of poor perinatal health may be prevented or reduced by adequate perinatal care and parenting education.

A program was developed to reduce the risk associated with adolescent pregnancy by providing education and social support to rural pregnant teenagers. The Resource Mothers Program utilized specially selected and prepared indigenous workers who demonstrated personal warmth, successful personal parenting experience, knowledge of community resources, and the ability to accept responsibility and provide leadership. Additionally, each Resource Mother had to live in the community, be a high school graduate, have a car, and be willing to be contacted at all hours.^{3, 4, 5}

Careful attention was paid to selection and training. Women who were chosen received an intensive six-weeks Resource Mothers training program. Their training included information on pregnancy, labor and delivery, family planning, nutrition, communication skills, infant stimulation, well-child development, home visiting techniques and skills, community resources, referral skills and work with extended families and individual patient reviews with supervision by a social worker.

The resource mother was to fulfill five essential roles for the pregnant adolescent: teacher, role

model, reinforcer, friend and facilitator. She made monthly home visits to the adolescent during her pregnancy, daily visits during the hospital stay and regular home visits during the infant's first year of life. The average case load for each resource mother was 30 to 35 teenagers, including both antepartum and postpartum patients.

The home visits were highly structured with specific learning objectives geared towards supplementing and reinforcing the professional services. The adolescents were seen in maternity and child health clinics. Resource mothers emphasized the importance of the mother in influencing her child's development. She often provided the mother with transportation to the clinic, physician's office or other ancillary services.

Patient recruitment was done through contacts made by the resource mother with schools, health departments, private physicians and allied community service agencies. Peers who were aware of the program also made referrals. Resource mothers were asked to make presentations about the program in schools, churches and civic groups.

An initial evaluation of 565 matched pairs (case/control) of rural teenaged primigravidas with single pregnancies was done by comparing those with and without the social support of a Resource Mother. In the population studied, 89 percent were black and 11 percent were white, 93 percent were single, and the ages of the mothers ranged from 13 to 18.

Each patient in the study population was matched with a control patient from a nearby group of counties.⁶ The controls were selected from those women under 19 years of age who had a singleton live birth during 1981-85 who had no known previous pregnancy and who resided in the nearby rural county. The matching variables were year of delivery, age of mother, race of child and sex of child.

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THE RESOURCE MOM

The match cases/controls were compared according to the following criteria:⁸ adequacy of prenatal care (inadequate care defined as fewer than five prenatal visits or care begun after the sixth month of pregnancy), low birth weight (<2500 grams), very low birth weight (<1500 grams). Table I outlines the perinatal outcomes of both the case and the controls. These results suggest that supportive intervention was effective in improving prenatal care and birthweight.

The Maternal and Child Health Division of the South Carolina Department of Health and Environmental Control (DHEC) implemented a second Resource Mothers project in an effort to replicate the first study and improve clinical services to help teenagers deal with the numerous problems related to pregnancy, childbirth, infant care and parenting. To date, the project has been implemented in four public health districts and is fully incorporated into DHEC's Maternal and Child Health Programs.

A total of 16 Resource Mothers are currently providing services in 16 counties (Aiken, Allendale, Bamberg, Barnwell, Calhoun, Chesterfield, Clarendon, Colleton, Darlington, Dillon, Florence, Marion, Marlboro, Orangeburg and Williamsburg). The Resource Mothers are members of the multidisciplinary staff at the local health department and are supervised by Masters level Social Workers. These Social Workers coordinate training and service delivery for the Resource Mothers. They also provide direct social casework intervention for those pregnant and parenting teens with complex biopsychosocial problems.

Since patient enrollment began in October, 1985 more than 1,000 pregnant teens have been

enrolled in the program. Data are currently available on Resource Mothers activity through July, 1987. Table II indicates the number of pregnancies, deliveries, and pregnancy outcomes for the project participants from October, 1985 through July, 1987.

The Resource Mothers Program is exceeding its primary objective to improve birthweight among 85 percent of infants born to adolescent mothers. The program is also exceeding its objective to enroll at least 25 percent of teens in prenatal care during the first trimester. Activities which measure health knowledge and parenting skills of project participants will be evaluated at the end of the project period when more than 1,000 patients are delivered.⁹ Other objectives to be evaluated at the end of the project period address appropriate weight gain during pregnancy, family planning enrollment, breastfeeding, school re-enrollment, infant immunization and appropriate well-child care.

Although it is not clear whether the improvement in perinatal outcomes with supported intervention is due to improved prenatal care only or something special about the supported role, other investigators have shown positive effects of social support that carry over into infancy.¹⁰ Better postpartum adjustment for young mothers and improved health and development for the infants when social support was available during pregnancy have been reported.¹¹

It would appear that social support networks targeted at populations of women at greatest social and economic risks are a practical approach towards improving perinatal outcomes. □

TABLE I
SUMMARY OF PERINATAL STATISTICS
MATCHED CASES/CONTROLS

	<i>Cases</i> <i>N (%)</i>	<i>Controls</i> <i>N (%)</i>	<i>Significance</i>
Inadequate Prenatal Care	103 (18.3)	202 (35.9)	$X^2 = 44.3$ $p < 0.000001$
Low Birthweight	60 (10.6)	92 (16.3)	$X^2 = 7.6$ $p < 0.006$
Very Low Birthweight	8 (1.4)	15 (2.6)	not significant
Neonatal Mortality per 1000 live births	6 (10.6)	7 (12.4)	not significant
Infant Mortality per 1000 live births	7 (16.7)	8 (19)	not significant

THE RESOURCE MOM

TABLE II

Total Patients Admitted to Program, To Date	913	
Patients Who Have Delivered, To Date	543	
<i>Outcomes of Pregnancies</i>		
	<i>Number</i>	<i>Percent of Total Outcomes</i>
Miscarriage/Abortion	5	0.92
Fetal Death	3	0.55
Single Live Births	534	98.34
Twin Live Births	1	0.18
<i>Outcomes of Live Births</i>		
	<i>Number</i>	<i>Percent of Live Births</i>
Low Birthweight	64	12.1
Normal Birthweight	463	87.9
Unknown Birthweight	8	—
Infant Deaths	3	0.56

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LEGAL OPTIONS AND CONSIDERATIONS FOR THE PREGNANT TEEN

NANCY A. RALEY*

As adults we take it for granted that to postpone childbearing we simply obtain and use an effective birth control method. We are also aware that if a crisis pregnancy were to occur, abortion would be an option that could be quietly arranged through a private physician or clinic.

For teens these matters are much more complex. Fortunately one major roadblock, a youngster's simple lack of knowledge about the risks and responsibilities of sexuality, will soon be seriously addressed in South Carolina schools with this year's passage of the Comprehensive Health Education Act. However, a second obstacle—a complex one requiring sophisticated understanding—looms virtually unchallenged. Legal options for teens in our state are not the same options guaranteed to adults, yet legal *repercussions* are virtually identical in the matter of reproduction.

The parent/child relationship is generally the critical factor determining whether legal restrictions are to be burdensome or not. Ironically, having confidence in one's own positive relationship with a parent or teen may be the greatest handicap to awareness of this matter. When a young person asks for and receives full parental support during a critical life turning point such as a pregnancy, laws mandating such involvement are hardly noticed, a technicality quickly addressed in the press of other concerns. Therefore it may be difficult to understand that for those without the advantage of a supportive parent—or even a parent present in the home—a restrictive law takes on crisis proportions of its own. Deciphering and confronting the “system” may seem insurmountable to an already fearful teen.

Prevention, of course, is the *key* to solving the teen pregnancy problem. In 1983 an attempt was made by the U.S. Department of Health and Human Services to promulgate regulations which

would have mandated parental notification when minors received Title X contraceptive services. The proposal was defeated soundly, as others have been, and no legal restrictions prevent teens from obtaining contraceptives confidentially. When at Planned Parenthood we are asked how old a girl must be to receive contraceptives in our clinic the answer is basic: If she is sexually active and old enough to become pregnant, she is old enough to use a birth control method.

Barriers other than legal ones still pose a very real problem, however, and contraceptive providers must be sensitive to the critical role they play regarding accessibility and compliance. A 1986 Lou Harris poll of teens aged 12-17 found that guaranteeing confidentiality ranked highest of all the possible actions suggested to encourage the use of birth control among teens. Another significant obstacle identified in the same poll is that of the pelvic examination, nearly always required before prescription of the birth control pill. Sixty-nine percent of girls said that this requirement frightens many girls away.¹

Therefore, a physician who is aware of these concerns might do well to recommend a first physical exam as a routine matter for the early teen years, if for no other reason than to assure the young woman that services can be obtained confidentially in the future if she has need for a contraceptive or pregnancy test. While she should absolutely be encouraged to talk with her parents about such matters, the decision to do so must rest with her. A Planned Parenthood counselor with many years of experience urges girls to give their parents the opportunity to help them, hard as it may be to break the news. “I tell them they can expect their parents will be very upset and angry, but that once they work through the anger, they will want to help them.”² However, a teen who is adamant in her refusal to talk with a parent may have compelling and legitimate reasons motivating this reluctance. Referral to an appropriate counselor or social service agency will help assure

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LEGAL OPTIONS AND CONSIDERATIONS

adult guidance—and aid when abuse or neglect is the complicating factor in her home life.

Early detection of pregnancy is of course *critical* for teens—for both medical reasons (especially the need for prenatal care) and those pertaining to legal options. Teens often arrive with a built-in “delay factor”: due to fear, denial, ignorance of pregnancy symptoms, or normally irregular menstrual cycles, many weeks or months may pass before a teen seeks help or a parent suspects a problem. By this time a delay of even a few days can seriously limit options. A pregnancy test, followed by a pelvic exam and counseling if the test is positive, should be provided immediately.

In considering options available to a pregnant teen, parental involvement should be a valuable support for most young women—and for the teen male involved in a pregnancy, as well. It is helpful to keep in mind, however, that the extended family is alive and well in South Carolina, and that often a relative such as an aunt, an older sister or a grandparent—or even a close adult friend—can function as a very able support person for the teen.

The “Decision Tree”³ (Figure 1) depicts in graph form the considerations each alternative involves. Essentially a teen (or any woman facing

unintended pregnancy) has three options:

- (1) Childbearing and Parenting
- (2) Childbearing and Adoption
- (3) Terminating the Pregnancy

While a choice between parenting and adoption can be delayed, if necessary, as pregnancy progresses, this is not at all the case in considering the possibility of pregnancy termination. Medical, legal and financial considerations loom larger every week. Again, early attention to the matter is of utmost importance in order to allow time for careful consideration of such a major life decision.

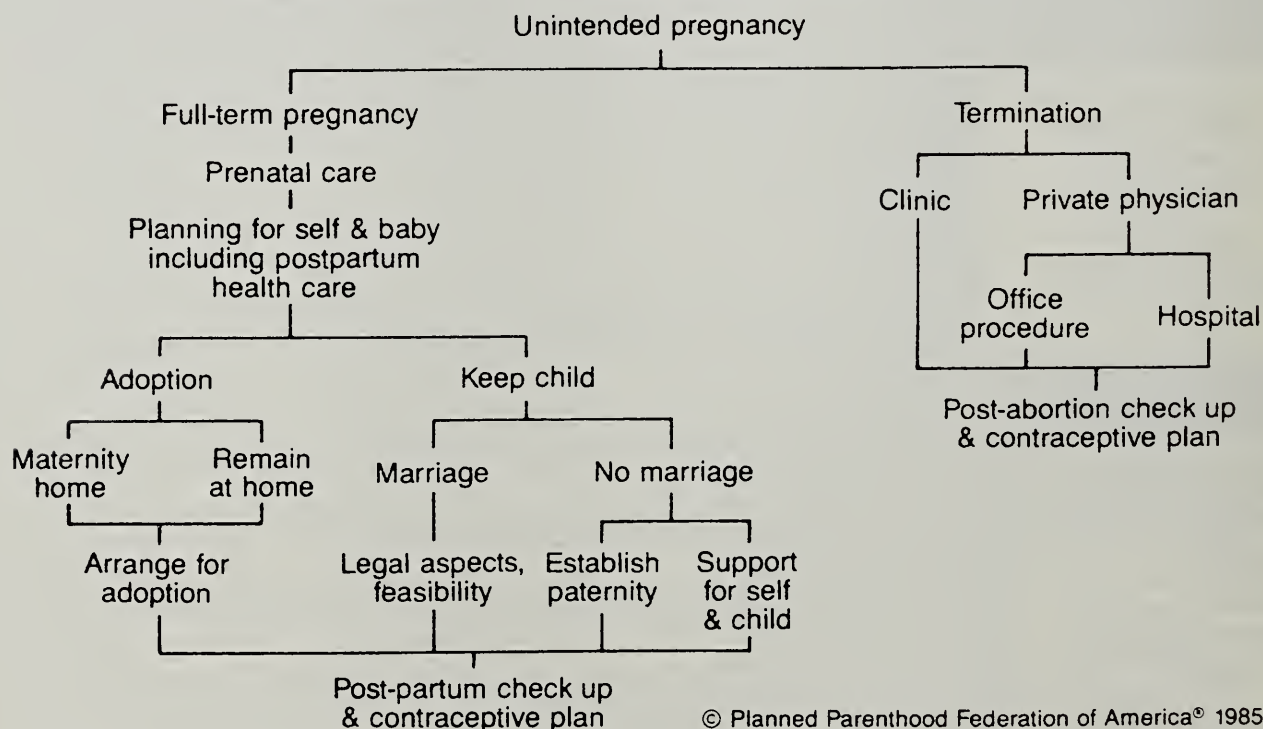
Legally, the scales seem to be tipped in favor of childbearing. Certainly there are no legal restrictions to childbearing, as there were none to conceiving a pregnancy.

While on the surface teenage childbearing appears to be free of legal encumbrances, as adults we are well aware of the many “strings” attached to parenthood. In reality, of course, there are a plethora of legal and societal obligations which the teen parent pays on a lifetime “installment plan.” Consider, for example, that:

—Child support payments are required by law for a child’s first 17 years of need when a

FIGURE 1

DECISION TREE FOR WOMEN FACED WITH AN UNINTENDED PREGNANCY



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LEGAL OPTIONS AND CONSIDERATIONS

young parent is not otherwise supporting his or her child.

- Child neglect is a crime. A teen parent is therefore obligated to provide diapers, formula, food, clothes, shelter, medical attention, and above all, time-consuming *care*.
- Parents must assure school attendance and prevent juvenile delinquency.
- Lack of moral guidance and lack of preparation for life as a productive, employed adult are a “crime” against society when a parent neglects these responsibilities to a child.

It is important to stress to the teen who has chosen childbearing that she can and should begin caring for her baby and its future from the moment she learns of her pregnancy. Teens are generally unaware of the complicating realities of life and for this reason have difficulty thinking in terms of needs and problems lying years ahead. Medically, of course, we know that prenatal visits and good health practices are critical. Legal and financial provisions are vital as well. Establishing paternity, for instance, will give the child future access to child support, Social Security benefits, disability and veterans’ benefits, pensions and other rights of inheritance. (Just because the young father is unemployed at the moment doesn’t mean he always will be!) Wading through the red tape of government programs is also worthwhile—WIC, Medicaid and AFDC are all good potential aids.

Childbearing followed by adoption offers the advantage of both an unencumbered future for the teen parent and the legal freedom to make this choice without a parent’s consent, if necessary. This autonomy also binds the teen to her decision, as stated in the South Carolina Code Section 20-7-1690(C): “Consent or relinquishment for the purpose of adoption given by a parent who is a minor is not subject to revocation by reason of the parent’s minority.”

Legal arrangements for adoption of course require extreme care and may at times be complex. When private arrangements are considered over those of the Adoption and Birth Parent Services program provided through the South Carolina Department of Social Services, caution is particularly advisable, as the provider will be less a regulated, “known quantity.” Again, parental support and early planning are generally a teen’s most valuable aid, but understanding of alternative family support systems may be needed.

For a young woman under the age of sixteen in South Carolina her choice of pregnancy termination may either confront serious legal restrictions, or no restrictions of any consequence, depending on two factors: (1) whether a parent is agreeable and available to give consent; (2) the length of the pregnancy. Of course matters of cost and accessibility of services (e.g. location, transportation) also present major barriers to many.

According to the American Civil Liberties Union, “A minor’s right to choose abortion without parental knowledge or consent has emerged as one of the most hotly debated and frequently litigated constitutional privacy issues of the 1980s. Currently there are 20 states which have parental notification or consent laws, not all of which are in effect.”⁴

South Carolina law requires that, “If the woman is unmarried and less than sixteen years of age, consent shall be also obtained from either parent with legal custody or her legal guardian or from any other person standing in loco parentis” (SC Code Section 44-41-30(b)). State law also dictates that a second trimester abortion be performed “in a hospital or clinic certified by the Department [of Health and Environmental Control]. (SC Code Section 44-41-20(b)), meaning that the cost can be easily multiplied by a factor of five (from about \$200 to \$1,000), when one day is all it takes to cross the line into the second trimester, and only a handful of cities offer hospital services. (No clinics are currently certified in South Carolina to provide second trimester abortions.)

For any particular teen, then, the matter quickly becomes one of good fortune or misfortune, where the haves and have nots are divided along strict lines:

- Supportive parent / No supportive parent
- ≤ 12 week pregnancy / > 12 week pregnancy
- Home in large city / Home in rural town
- Transportation / No transportation
- Money / No money

While the subject here is regarding legal rather than medical matters, it is easy to see that a desperate teen faced with the restrictions noted above might soon find herself facing medical concerns. Such extremes in inaccessibility begin to replicate the conditions before 1973 when women died or suffered serious infection from self-induced or illegal abortions.

LEGAL OPTIONS AND CONSIDERATIONS


The issue of mandated parental involvement is far from settled. During the 1988 legislative session the South Carolina House passed a bill to require parental consent for young women under the age of 17 (more restrictive than current law) to obtain an abortion. The bill also allowed the option of judicial approval as a bypass to parental consent, an attempt to make the law more constitutional, and therefore less vulnerable to challenge in federal court. The Senate proposed a similar bill. As the matter remained unresolved at the close of the session, next year's General Assembly will undoubtedly face more of the same type proposal.

For teens confronted with unintended pregnancy there are no options but difficult ones—and

too few at that. Support, information and early care can truly make a positive difference for her—and a parent/relative and physician team is well suited to help make this difference.

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Editorial

ADOLESCENT PREGNANCY: A TEAM APPROACH

Poor sex education, increased adolescent pregnancy, inadequate prenatal care, prematurity and neonatal deaths are interrelated like links in a chain. The authors of the articles in this issue of *The Journal of the South Carolina Medical Association* attempt to expand our understanding of this interrelationship.

In order to deal with the appallingly high incidence of perinatal mortality in South Carolina, we must focus our efforts on breaking this chain. We must marshal all our forces in a team approach in order to identify what links in the chain can be altered and what structural approaches can be taken to do so. Physicians, legislators, social workers, educators, public health officials, parents, clergy and other concerned citizens and groups must all become a part of this team approach.

The South Carolina General Assembly is to be commended for its part in passing the Comprehensive Health Education Act signed into law by the Governor on April 18, 1988. Now it is up to the rest of the team members. Listed below are resources in communities throughout the state which are available to assist in dealing with the

many interrelated problems involved in adolescent pregnancy. Do your part as a member of the caring team and share this information with your patients, use it for referrals and pass it along to your colleagues.

It is only through the dedicated efforts of all of us working together that we can weaken and ultimately break the chain of events which has culminated with South Carolina's ranking as 48th among the 50 states in the incidence of perinatal mortality.

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REFERRAL RESOURCES

COUNTY	HEALTH DEPARTMENT	MENTAL HEALTH CENTER	TEEN PREGNANCY PREVENTION COUNCIL
Abbeville	459-2131	459-9671	459-4106
Aiken	642-1687	648-0481	649-6671
Allendale	584-3818	584-4636	584-4603
Anderson	225-3731	224-3513	225-2381
Bamberg	245-5176	793-4274	531-3151
Barnwell	259-3661	259-7179	648-9531
Beaufort	525-7215	785-8886	531-3151
Berkeley	761-8090	761-8282	747-1339
Calhoun	874-2037	874-2301	531-3151
Charleston	724-5800	727-2000	747-1339
Cherokee	487-2705	487-4284	489-3141
Chester	385-6152	377-8311	385-6181

REFERRAL RESOURCES

Chesterfield	623-2117	623-2229	479-7181
Clarendon	435-8168	435-2112	435-8429
Colleton	549-1516	549-1551	549-2596
Darlington	393-4511	332-4141	479-8311
Dillon	774-5611	774-3351	774-5611
Dorchester	821-1624	871-4030	747-1339
Edgefield	637-3159	637-5788	637-3161
Fairfield	635-6481	737-3039	256-4200
Florence	662-5281	662-1401	
Georgetown	546-5593	546-6107	546-4481
Greenville	240-8800	235-0184	299-0779
Greenwood	223-8488	223-8331	223-9751
Hampton	943-3878	943-2828	943-3621
Horry	248-6381	248-7213	248-6381
Jasper	726-8121	726-8030	525-7515
Kershaw	432-1426	432-5192	432-9071
Lancaster	286-9948	285-7456	283-3302
Laurens	984-6587	984-2568	984-2514
Lee	484-6612	484-9414	484-5416
Lexington	791-3580	791-4464	256-4200
Marion	423-4312	423-0780	423-0891
Marlboro	479-6801	479-9091	479-7181
McCormick	465-2511	465-2223	465-2112
Newberry	276-4155	276-8000	276-1091
Oconee	638-3639	638-5823	225-2381
Orangeburg	536-9060	536-1571	531-3151
Pickens	878-7821	878-6830	868-2810
Richland	748-4970	737-5550	256-4200
Saluda	445-2141	445-8122	445-8117
Spartanburg	596-3337	585-0366	585-6896
Sumter	773-5511	775-9364	773-7158
Union	427-5604	427-1224	427-4386
Williamsburg	354-9927	354-6922	354-6106
York	684-7004	648-4694	324-7521

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COLONOSCOPIC POLYPECTOMY: ANALYSIS OF 397 POLYPS REMOVED BY SNARE

LOUIS F. KNOEPP, JR., M.D.*

Since Wolff and Shinya first published their signal article in 1971 on colonoscopy in *The Journal of the American Medical Association*,¹ colonoscopy with polypectomy has replaced laparotomy with colotomy and polypectomy in the treatment of colorectal polyps.

With this change has come the realization that neoplastic colon polyps are the forerunners of colon cancer.² The feeling has grown that removal of benign polyps in large numbers might prevent the development of colon cancer.^{3, 4, 5} Colon and Rectal Surgeons, Gastroenterologists, and General Surgeons have become colonoscopists. Legitimate training programs and more questionable short courses abound. Problems have arisen regarding utilization, training and credentialing, and in avoiding complications from the procedure.

Still the number of endoscopists grows, and the number of colonoscopies done continues to increase. It has become apparent that at least one third of the population harbors one or more adenomatous polyps,^{6, 7} and we are out to find them all.

Yet the other side of the coin is that many physicians do not do rectal exams, or sigmoidoscopy, or colon x-ray, and do not refer patients for colonoscopy even when strong indications are present.⁸ For them, endoscopy must continue to be strongly touted. For the skilled endoscopist, enthusiasm must be tempered with common sense.

The following is a personal series of a single author over 14 years.

METHODS

The author began to do colonoscopy and polypectomy in 1972, shortly after the work of Wolff and Shinya. He had experience with a prototype flexible sigmoidoscope in his colon and rectal residency, but actual colonoscopy training came from reading the literature, from going away to watch other endoscopists, and from starting out on his own very cautiously. As suggested by Shinya⁹, polypectomy was not attempted until experience was obtained with diagnostic colonoscopy.

Polyps snared varied from .5 to 5 cm. in size. Pedunculated polyps of any size were snared, provided the snare would fit over the head of the polyp and the stalk could be visualized. Sessile polyps were snared either around the base or piecemeal, as long as the polyp could be well visualized and the base was not too large. Very large or obviously malignant polyps were deferred for colon resection. Very small polyps were either fulgurated or biopsied or left alone. Early in the series, polyps under 4 mm. were usually left alone. Later in the series, the hot biopsy technique was used. Thus, this series does not include any very large, or obviously malignant, or very small polyps; it only includes snared polyps.

The technique has been reported elsewhere.¹⁰ Over the years certain changes took place. Initially done in the operating room, the examination was later transferred to the outpatient endoscopy suite. X-rays of the abdomen are now taken only

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rarely during passage of the scope to locate the tip; fluroscopy was never available and never used. The ileocecal valve can essentially always be seen if one is in the cecum.

The size of larger polyps was obtained by measuring the polyp after removal; smaller polyps were compared in diameter to the diameter of either the biopsy forceps or the polyethylene snare sheath, either of which is about 2 mm.

RESULTS

The series covers the 14-year period, from December 1971 through September 1985. During this period 1,333 colonoscopies were done, with 397 polyps being snared in 329 patients.

The age of patients ranged from eight to 84 years, and the average age was approximately 55. The series was equally divided between males and females.

The cecum was reached in 40 percent of the first 500 patients, 80 percent of the second 500 patients, and in 84 percent of the last 333 patients. In the last 333 patients the terminal ileum was entered 39 percent of the time.

There were three complications—one full thickness burn necessitating hospitalization and antibiotics, one free perforation at the polypectomy site necessitating operative closure with temporary colostomy, and one post operative bleed necessitating transfusion.

The sizes of polyps removed by snare are listed in Table 1. The most common size snared was 10 to 19 mm., with the second most common being 5 to 9 mm.

The location of polyps snared is reported in Table 2. The most common location was the sigmoid colon, with the second being the descending colon followed by the rectum. Rectal polyps were originally removed by rigid sigmoidoscopy, and the patient then underwent a colon x-ray to look for other polyps. This artificially lowers the number of rectal polyps. Now colonoscopy is done on all patients with significant polyps (adenomas larger than 5 mm.), both to remove the polyp and search for synchronous lesions.

The pathology of polyps removed is detailed in Table 3. Adenomas were found in 51 percent of patients, followed by adenovillous polyps in 14 percent and villous polyps in nine percent of patients. Invasive carcinoma (invasion below the muscularis mucosa) was found in three percent of patients. Nonneoplastic polyps were found in 20

TABLE 1. Sizes of Polyps Snared

<i>Size in mm</i>	<i>Number</i>
0-4	13
5-9	149
10-19	170
20-29	37
30-39	21
40+	7
Total	397

TABLE 2. Location of Snared Polyps

<i>Site</i>	<i>Number</i>
R	39
S	182
D	70
SF	13
T	33
HF	13
A	21
C	26
Total	397

TABLE 3. Pathology of Snared Polyps

<i>Pathology</i>	<i>Number</i>	<i>Percent</i>
adenoma	202	51
adenovillous	57	14
villous	35	9
carcinoma	12	3
ca in situ	3	.7
carcinoid	1	.2
non-neoplastic	78	20
lost	6	1.5
adenohyperplast	3	.7
Total	397	100

percent of patients. This is broken down into six percent hyperplastic, five percent juvenile, four percent "mucosa," 1.5 percent pseudopolyps, 1.5 percent "inflamed mucosa," 1.5 percent lymphoid, and 0.4 percent angiomas.

Six polyps (1.5 percent) were lost, and three polyps (0.7 percent) were reported "adenohyperplastic." The percentage of lost polyps

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can be kept down by biopsying the polyp before snaring it, if the polyp is small and in a difficult location.

The morphology of polyps with invasive cancer is reported in Table 4. All polyps with invasive cancer were larger than one cm. Three were exactly one cm. All histopathologic types of neoplastic polyps were represented among the malignant polyps, although adenovillous polyps were most frequently involved with invasive cancer.

All polyps with invasive malignancy were treated by radical sigmoid colectomy or low anterior resection. In each case, no residual polyp and no lymph node metastases were found.

The proportion of polyps containing invasive cancer according to size is listed in Table 5. It is significant that 0/162 snared polyps less than one cm. in size contained invasive cancer. If polyps were one to two cm. in size the proportion with cancer rose to three percent which is the same as the value for the entire series, and if the polyps were larger than two cm. the proportion with invasive cancer was 11 percent.

The proportion of neoplastic and non-neoplastic polyps according to size is shown in Table 6. It can be seen that neoplastic polyps were found even among the very small polyps, although invasive cancer was not. The three polyps with carcinoma in situ were also larger than one cm.

The distribution of polyps according to whether neoplastic or not is shown in Table 7. Non-neoplastic polyps were found in all segments of the colon. Those in the rectum and sigmoid were most often hyperplastic; those in the right colon were usually "mucosa," "inflamed mucosa," or lymphoid polyps. Juvenile polyps were also most common in the left colon.

TABLE 4. Polyps with Invasive Cancer

Size, mm	10, 10, 15, 15, 15, 20, 20, 22, 25, 29, 30, 35
Location	sigmoid 11, rectum 1
Morphology	pedunc 8, sessile 4
Pathology	adenoma 3 adenovillous 6 villous 2 polypoid carcimoma 1
Treatment	colon resection in all, no residual tumor or nodes

DISCUSSION

There is an advantage in being able to state that the incidence of invasive carcinoma in one's series of snared polyps is three percent and that the incidence of malignancy in polyps less than one cm. is very low (0/152). It does not mean that one can safely ignore polyps less than one cm.; on the contrary, all polyps should ideally be biopsied and destroyed.

There are many reports in the literature suggesting that adenomatous or neoplastic polyps are

TABLE 5. Sizes of Polyps Containing Invasive Cancer

Size	Number	Percent
-1 cm	0/162	0
1-2 cm	5/170	3
+2 cm	7/65	11
Total	12/397	3

TABLE 6. Sizes of Polyps Snared

Size in mm	Number		
	Total	Neoplas	Cancer
0-4	13	5	—
5-9	149	91	—
10-19	170	153	5
20-29	37	35	5
30-39	21	20	2
40+	7	6	—
Total	397	310	12

TABLE 7. Location of Snared Polyps

Site	Number	
	Neoplastic (total)	Non-neoplas (ca)
R	31(1)	8
S	149(11)	28
D	54	12
SF	9	4
T	25	8
HF	11	2
A	14	7
C	17	9
Total	310(12)	78

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very common in the general population.^{6, 7} An excellent autopsy series from New Jersey⁷ reported that 46.9 percent of 518 cases studied had at least one adenomatous polyp in the colon. Nineteen clinically unsuspected cancers were found, with 18/19 being larger than one cm. in size.

No one can remove all the adenomas from the general population, and it is almost impossible to completely clean the colon of polyps when multiple polyps are present. If one follows colonoscopy with colon resection, and if one compares the number of polyps seen at colonoscopy with the number found in the surgical specimen, there are very frequently small "missed" lesions in the specimen. In my experience there will be about twice as many polyps in the resected specimen as were seen on colonoscopy. And many more small polyps are seen on colonoscopy as are found on either standard or air colon x-ray.

A rational approach would appear to be "go where the money is," as Willie Sutton would say. All polyps greater than one cm. should be removed or destroyed. If they cannot be removed by colonoscopy, then colon resection should be done. As many polyps as possible in the five to 10 mm. range should be biopsied and destroyed,

usually by the hot biopsy or snare technique. But polyps less than 5 mm. size are not going to result in any immediate harm to the patient. If one can not remove all of these, then one can come back next year. □

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TREADMILL TESTING FOR THE PRIMARY CARE PHYSICIAN

GERALD E. HARMON, M.D.*

A graded exercise test (GXT) can be easily provided by primary care physicians. We report here the results of 309 treadmill stress tests accomplished over a four-year period and describe a method for the office-based practitioner to provide treadmill testing for patients.

METHODS

Tests were performed at the cardio-diagnostic lab at the hospital or in the physician's office, using either a Burdick or a Quinton treadmill. A brief summary of the patients tested is listed in Table 1. Indications for testing were identified as chest pain (cardiac or noncardiac not differentiated), known disease, or asymptomatic screening. Those identified as asymptomatic included individuals with strong risk factors for coronary disease or those specifically undergoing testing for other reasons.

All GXT's were conducted according to the Bruce protocol and^{1, 2} were interpreted as positive, negative, or nondiagnostic using established criteria involving heart rate, systolic blood pressure, dysrhythmias and repolarization changes.^{1, 3, 4}

The patients tested have been followed for one to five years, and some subsequently underwent thallium treadmill testing, cardiac catheterization, or both.

RESULTS

The GXT results and subsequent follow-up of those with chest pain and those without complaints of chest pain are summarized in Tables 2 and 3. A breakdown by sex is provided in each Table. Only cardiac cath or thallium treadmill results are listed in those tables; not all patients with positive GXT's underwent subsequent testing, and only a few with negative results were later tested further.

Of the 94 male patients with chest pain, later follow-up was not available for five patients. Of

the 97 asymptomatic males, two were not followed. Seven of 84 females with chest pain were not available for follow-up and all 24 asymptomatic females have been followed.

There were virtually no complications associated with the performance of these tests, although one male patient was recommended for urgent hospitalization for presumed unstable angina due to the strongly positive result in his case. He was later found to be approximately two days removed from a subendocardial infarction at the time of his GXT.

In the five years since the testing began, only one patient is known to have suffered a sudden death. That gentleman had a positive GXT and inoperable three vessel coronary disease on cardiac catheterization.

DISCUSSION

It is not surprising that two-thirds of those tested were males and that there were nearly equal numbers of those with and without chest pain syndromes. Men would be much more likely to have higher risk factors in an asymptomatic population and be subjected to exercise testing. Only 22 percent of women were tested without chest pain symptoms.

Twelve percent of the total tests were nondiagnostic (eight percent of males and 20 percent of females), which lends support to the end points used to determine the tests.

The predictive accuracy of a positive test in males with chest pain was 79 percent, which is reasonable for such a cohort of patients. The pre-

TABLE 1

	Male	Female
Number	199 (64.4%)	110 (35.6%)
Ages	14-78 (Mean 45.4)	13-77 (Mean 49.6)
Chest pain	94	84
Screening	97	24

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TABLE 2

		Cath Results Chest Pain			
		Male		Female	
Positive	GXT	28	15 positive-53.6 % 4 negative-14.3	26	5 positive 7 neg cath 38.4 3 neg thall
Negative	GXT	56	1 pos 1.8 % 7 neg 12.5	46	1 pos 2.2 % 3 neg 6.6
Nondiagnostic	GXT	10	1 pos 10 % 2 neg cath 40 2 neg thall	12	1 pos 8.3 % 2 neg 16.7

TABLE 3

Asymptomatic
Cath Results

		Male		Female	
Positive	GXT	9	3 positive 2 negative	3	1 pos 1 neg
Negative	GXT	82		15	
Nondiagnostic	GXT	6		6	

dictive accuracy of other categories of patients could not be readily determined due to the relatively small numbers.

It is reassuring to note that only one of 138 men and one of 61 women who had negative GXT's were later noted to have significant coronary artery disease at catheterization. This was in a group followed for at least one year and some for up to five years.

TECHNIQUES FOR TREADMILL TESTING

We use the following checklist for performing a GXT in our office:

Procedure for a Treadmill EKG

1. Obtain informed consent, signed and witnessed.

2. Review cardiovascular history, risk factor analysis, and medication history.

3. Perform cardiovascular exam before testing, at end of exercise, and during recovery.

4. Select appropriate protocol.

5. Have the crash cart with emergency equipment accessible. Must have defibrillator and cardiac meds available. Personnel must be certified in CPR, and ACLS is strongly advisable.

6. Prepare the skin carefully and use high quality (silver) electrodes.

7. Record 12 lead EKG in supine and standing positions.

8. Familiarize the subject with the equipment and procedures. A low-level warm-up will reduce anxiety and not affect the test adversely.

9. Record 12 lead or selected 3 lead EKG's at intervals of one minute during each exercise stage. Record a 12 lead at the end of each exercise stage and at the termination of exercise. Record a 3 lead or a 12 lead EKG every two minutes during recovery.

10. Record blood pressure supine and standing pretest, during the final seconds of each stage, at the end point, and every two minutes during recovery.

11. Describe each test as positive, negative, or nondiagnostic and record the reason for this interpretation. Describe abnormalities in clinical response such as chest pain, weakness, dizziness, etc.

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Note the reason for terminating the test. Describe the presence or absence of cardiac rhythm disturbance and the blood pressure response.

An informed consent is obtained prior to each exercise test (Figure 1). The actual data obtained during the GXT is recorded on a standard report format (Figure 2). Office personnel of course require training to perform treadmill tests. We utilize licensed professional nurses in our office. One appropriate professional organization available to nurses and technicians is the South Carolina Chapter of the American Cardiologic Technologist Association (ACTA). The ACTA offers a number of courses which are extremely helpful to office- and hospital-based EKG personnel providing excellent training. It is also advis-

able that all office nursing staff be trained in basic cardiac life support (CPR). □

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FIGURE 1

WACCAMAW FAMILY PRACTICE GEORGETOWN, SOUTH CAROLINA

CONSENT FOR EXERCISE TEST

I, _____ authorize Dr. _____ and assistants to administer and conduct the graded exercise test. Dr. _____ has explained to me that this test is designed to measure my fitness for work and or sports; to determine the presence or absence of clinically significant heart disease, and or to evaluate the effectiveness of my current therapy.

I understand that I will walk on a motor-driven treadmill. During the performance of physical activity, my electrocardiogram will be monitored and my blood pressure will be measured and recorded at periodic intervals. Exercise will be progressively increased until I attain a predetermined end point corresponding to moderate exercise stress, or become distressed in any way or develop any response the physician considers significant whichever of the above occurs first. In addition, I may ask that the test be discontinued at any time.

Every effort will be made to conduct the test in such a way as to minimize discomfort and risk. However, I understand that as with other types of diagnostic tests, there are potential risks associated with an exercise test. These include episodes of transient lightheadedness, fainting, chest discomfort, leg cramps, and very rarely heart attacks or sudden deaths.

I further understand that the stress laboratory is properly equipped for such situations and that its professional personnel are trained to administer emergency care if necessary.

Date: _____

TIME: _____

Signature of Patient

Signature of Physician

Signature of Witness

TREADMILL TESTING

FIGURE 2

GRADED EXERCISE TEST (GXT)

Attending _____

Name _____

Age _____ Date _____

Clinical Information

1. Chest pain angina-like	()
2. Screening for IHD (Asympt.)	()
3. Known coronary disease	()
4. Non cardiac chest pain	()
5. Other	_____

Time _____ GXT H.R. _____

Cardiac Medications:

1. Digitalis	()	4. Beta blocker	()
2. Quinidine	()	5. Anti HT.	()
3. Nitrates	()	Other	_____

Risk Factors: Family Hx () HBP () Smoking () Cholesterol ()
Resting ECG _____

Stage	MPH/ Grade	Total Time	Heart Rate	RHYTHM	BP	Symptoms Comments
Supine	_____	_____	_____	_____	_____	_____
Standing	_____	_____	_____	_____	_____	_____
1.	1.7/10%	_____	_____	_____	_____	_____
2.	2.5/12%	_____	_____	_____	_____	_____
3.	3.4/14%	_____	_____	_____	_____	_____
4.	4.2/16%	_____	_____	_____	_____	_____
5.	5.0/18%	_____	_____	_____	_____	_____

Reason(s) for stopping: Primary (1) Secondary (2) Tertiary (3)

1. Chest pain	()	7. Hyperten.	()
2. Dyspnea	()	8. Hypoten.	()
3. Fatigue/weakness	()	9. St. Changes	()
4. Leg pain	()	10. Arrhythmia	()
5. Gen. appear	()	11. Tech. prob.	()
6. Cerebral sympt.	()	12. H.R. achieved	()

	Heart Rate	Rhythm	B/P	Comments
Immediate	_____	_____	_____	_____
2 Min. Post-ex.	_____	_____	_____	_____
4 Min. Post-ex.	_____	_____	_____	_____
6 Min. Post-ex.	_____	_____	_____	_____

Exercise Capacity _____ BP Response _____

EKG Response _____

Interpretation _____

Comments: _____

Conducted by: _____

PRACTICE MADE PERFECT

IMMEDIATE OPENINGS FOR:

GENERAL SURGERY

NEUROSURGERY

CARDIO - THORACIC SURGERY

PLASTIC SURGERY

PSYCHIATRY

ANESTHESIA

FAMILY PRACTICE

DIAGNOSTIC RADIOLOGY

INTERNAL MEDICINE



ANATOMICAL/CLINICAL
PATHOLOGY

OTOLARYNGOLOGY

OPHTHALMOLOGY

OB - GYN

ORTHOPEDIC SURGERY

UROLOGY

QUALIFICATIONS:

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NAVY DOCTORS LEAD THE ADVENTURE

COST-EFFECTIVE PRE-VACCINE SCREENING OF HEPATITIS B INFECTION IN HOSPITAL WORKERS: A SEROEPIDEMIOLOGIC STUDY*

RICHARD F. LITTLE, M.P.H.**

ERIC R. BRENNER, M.D.***

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KIRBY L. JACKSON

Hepatitis B infection is recognized as a major occupational hazard of medical and dental personnel.¹⁻³ The average yearly attack rate for hepatitis B (HBV) infection among hospital employees has been estimated to be between four and ten times the attack rate for HBV in the general population.^{1, 4} The introduction of the highly immunogenic (93%) hepatitis B vaccine has provided the means through which the excess risk of occupational HBV infection among hospital employees can be reduced.^{5, 6} Active immunization has been recommended for medical personnel with frequent blood contact.⁴⁻⁸

Since the cost of the three-dose hepatitis B vaccine is high (approximately \$100), screening programs have been advised for hospitals considering an immunization program.^{6, 8, 9} A screening program to eliminate persons already immune to HBV can be cost effective if there is correct identification of high risk personnel and some mechanism to predict the probability of HBV infection within high risk groups.

Studies using seroepidemiologic methods for risk analysis of occupational hepatitis B in hospitals have for the most part been conducted in large metropolitan multi-center settings or in large, teaching oriented institutions.^{1-4, 6, 7, 9-11} Relatively few studies have investigated the occupational risk of HBV infection among employees of rural hospitals.^{12, 13}

The current study attempts to assess the occupational risk of HBV infection among hospital workers in South Carolina hospitals using seroepidemiologic methods. Hospitals from rural and midsize communities, and from metropolitan and teaching settings are included in the study. Emphasis is given to the analysis of cost effectiveness of screening programs based on probability of HBV infection within groups at risk.

MATERIALS AND METHODS

Subject and Hospital Selection

Thirty-three of the 76 South Carolina community hospitals agreed to be included in the study. All 900 hospital workers from these hospitals were invited to participate in the study, 512 of whom (57%) submitted serologic samples and completed a questionnaire to obtain information on primary work location and occupation in the hospital, previous hepatitis experience, age, duration of employment, race, sex, and whether or not the person had received the HBV vaccine.

Laboratory Methods

All serologic samples were submitted to the Bureau of Laboratories, South Carolina Department of Health and Environmental Control and were analyzed by radioimmunoassay for the presence of antibody to hepatitis B surface antigen (anti-HBs) (AUSAB: Abbott Laboratories). All specimens were tested twice. Specimens in which anti-HBs was 10 Ratio Units (RU) or above, derived by dividing the sample counts per minute by the mean of the negative controls, were considered positive.¹⁴

Statistical Methods

Associations between single demographic variables which are thought to be risk factors for HBV

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exposure were evaluated using chi-square tests for categorical variables and Students' t-test for continuous variables. Logistic regression analysis was used to determine the estimated relative risks for the different occupational categories while simultaneously controlling for the effects of race, sex, and duration of employment in the hospital. The methods of maximum likelihood estimation and the likelihood ratio test were used to determine the appropriate logistic model. Indicator variables were used to identify occupation category: 1 if in a certain category, 0 otherwise. Since there were six occupational categories to consider, five indicator variables were used with ancillary personnel as the referent category. The other categorical independent variables were coded as follows: race, 0/1 for white/nonwhite; and sex, 0/1 for female/male.

RESULTS

Of the 512 subjects who submitted blood samples, 21 had been vaccinated and were eliminated from the study. Of the remaining 491, 460 had completed the questionnaire in its entirety.

The overall prevalence of seropositivity to anti-HBs in the 491 subjects was 10.39%. Employees of small hospitals (less than 200 beds) had half the prevalence of positive serologic tests to anti-HBs than the hospitals with 200 or more beds (6.6% compared to 12.6%). These differences were significant ($p < .05$). Job categories included physicians, registered nurses, licensed practical nurses, laboratory workers, housekeeping staff, clerical workers, and ancillary personnel. The group with the highest prevalence of HBV serologic marker was housekeeping, with 37.5% prevalence. Physicians were the next highest group, with 26.09% having positive tests for anti-HBs. The overall chi-square statistic for association between job category and percent positive to anti-HBs was significant ($p = .006$) suggesting a true difference in the prevalence of antibodies to HBV among the different categories. Duration of employment was significantly longer for physicians than for any of the other groups, as shown by analysis of variance using the Scheffe method for pairwise comparisons¹⁵ (Table 1).

No differences in the prevalence of positive serologic tests to HBV markers were found among the groups defined by work location within the hospital nor were there differences in duration of employment by work location in the hospital.

TABLE 1. Prevalence of Anti-HBs by Occupation in South Carolina Hospital Employees, 1984

Occupation	Number Tested	Percent Positive	Mean Duration of Employment
PHYSICIANS	46	26.09	19.20 *
R. NURSE	142	4.93	12.07
L. P. NURSE	74	9.46	9.39
LABORATORY	137	10.95	9.86
HOUSEKEEPING	8	37.5	5.58
CLERICAL	11	9.09	6.74
ANCILLARY	64	7.81	10.83

Chi-square for % positive = 26.661, 6 df, $p = .006$

F-test for mean duration of employment = 8.54, $p = .0001$

*Significantly different from the other groups by Scheffe's method.

Serologic samples were acquired from only four dialysis workers and were not included in analysis of employment by work location in the hospital.

Gender and reporting prior hepatitis of an unspecified type were both highly related to the presence of anti-HBs ($p < .001$). Twenty-one percent of the males were positive, while only eight percent of the females were positive for anti-HBs. Of those reporting previous hepatitis of an unspecified type, 50 percent were positive for anti-HBs. Nonwhites had a higher prevalence of anti-HBs than whites ($p = .08$). Previous blood transfusion and household contact with hepatitis were not related to presence of HBs (Table 2). Only twenty percent of those found to be positive reported ever having been ill with hepatitis.

There were significant differences in age and duration of employment between those positive and those negative for anti-HBs. The mean age of those with positive tests was 41.2 compared to 35.1 for the negatives ($p = .0004$). The seropositives tended to have worked for a longer duration than the seronegatives, 15.1 years versus 10.7 years ($p = .0002$).

For the purposes of the logistic regression analysis, duration of employment was transformed to the natural log scale. The untransformed variable was skewed toward longer duration of employment, and the transformed variable was more normally distributed. The likelihood ratio test was used to choose the best model to predict HBV infection and the final restricted model included each occupational category, race, sex, the (natu-

HEPATITIS B SCREENING

TABLE 2. Anti-HBs Positive Test and Risk Factors for Hepatitis B Virus Among Employees of Thirty-Three South Carolina Hospitals

Risk factor		Number tested	Percent positive	Chi-square	P-Value
Race	white	395	9.37	3.01	.08
	nonwhite	82	15.87		
Sex	males	89	21.35	13.69	.0002
	females	387	8.01		
Transfusion	yes	73	8.22	0.50	.60
	no	406	10.84		
Prior Hepatitis (unspecified type)	yes	22	50.00	38.71	.0001
	no	458	8.52		
Household hepatitis	yes	23	8.57	0.08	0.78
Contact (unspecified type)	no	457	10.58		

TABLE 3. Odds Ratios for Risk Factors and Occupational Categories Using Logistic Regression for Employees of Thirty-three South Carolina Hospitals

Factor	Odds Ratio	95% Confidence Intervals
Race	1.90	0.53 - 6.80
Sex	3.39	0.63 - 9.03
Duration of employment (2-fold increase)	1.22	0.65 - 2.26
MD (2-fold increase in duration of employment)	9.47	8.36 -10.58
RN	0.60	0.12 - 3.07
LPN	1.42	0.30 - 6.80
LAB	1.78	0.41 -48.26

Reference category: ancillary

ral) log of duration of employment, and an interaction term. Interaction between the category physician and (natural) log of duration of employment for physicians improved the overall predictability of the model ($p < .01$).

Using logistic regression analysis, the odds ratios of infection were calculated for the different occupations while simultaneously controlling for the effect of race, sex, and duration of employment (Table 3). Since duration of employment and age were highly correlated ($r = 0.77$), duration of employment was used as the variable most closely associated with risk of occupationally acquired infection.

The estimated odds ratio for a two-fold increment in duration of employment for physicians is 9.47 (95% CI=8.4-10.6). The estimated odds ratios for the other occupational categories were not significant at the five percent level.

The predicted probabilities of HBV infection derived from the logistic model allows for comparison of the probabilities of infection at different periods of employment for each occupational category (Figure 1).

DISCUSSION

The results of this study offer guidance to hospitals which may be assessing the need for active immunization and for considering the financial implications of serologic screening programs in advance of immunization for hepatitis B. Log-

Figure 1

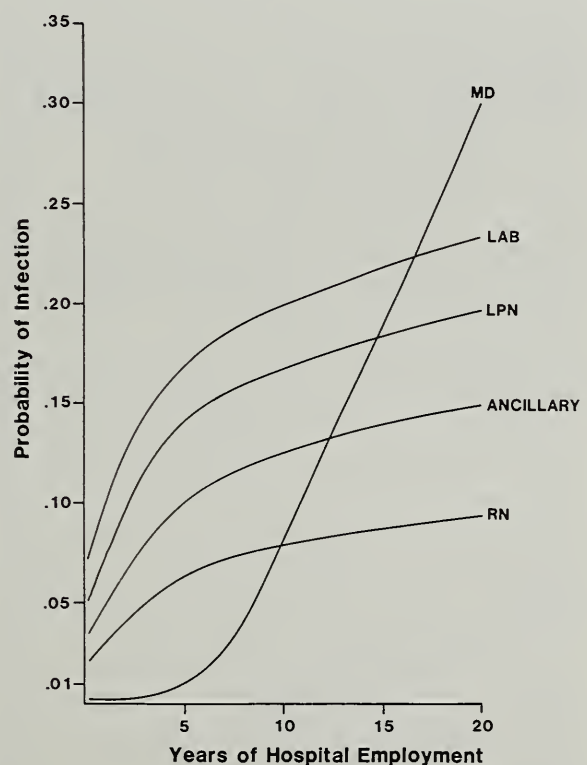


FIGURE 1: Probability of HBV infection by years of hospital employment and job category. Race and gender held constant at the low risk value.

ically, the higher the risk of infection, the greater concern for HBV prevention.

This study estimates the prevalence of antibodies to the hepatitis B surface antigen to be relatively low in small hospitals compared to large hospitals. Only 6.6% of those tested in small hospitals had positive tests to HBV markers compared to 12.6% in large hospitals. In a seroepidemiologic survey of hepatitis B in rural hospitals, Harris et al.¹³ found only 4.7% of the employees to have HBV markers. It would appear that the present study concurs with their findings.

For physicians, the risk of infection was shown to increase about 9.5 times for each two-fold increase in duration of hospital practice. The risk of infection for housekeeping personnel appears to be quite high, and is significant at the 10% level. It is strongly suspected that these may be community acquired infections. It can not be ruled out, however, that some activity in the hospital is placing these workers at high risk. According to the personnel departments of the hospitals where these employees worked, clinical hepatitis developed in some of these workers after they had been employed, ruling out community acquired infection as the only explanation. In other studies, housekeeping staff has been shown to be involved in a relatively high proportion (19.5%) of incidents exposing employees to hepatitis B.¹² Exposure to discarded needles and broken materials in trash receptacles or linens is thought to account for most HBV exposure among housekeeping personnel within the hospital.^{12-14, 16}

Nurses, laboratory workers, clerical and ancillary personnel were at similar risk. These groups may be at greater risk of HBV infection than the non-hospital community, but seem to be at about equal risk across the occupations. Since clerical workers have no exposure to blood or blood products, they would not be among those hospital workers threatened by the HBV occupational hazard. The small number of clerical workers submitting to serologic analysis may be evidence of self-selection into the serologic analysis because of some personal concern about hepatitis. At any rate, it is not possible to conclude that this sample of clerical workers is representative of the population of hospital clerical workers in South Carolina.

There is apparently a delay in significant risk among physicians until about 10 years of employment, although increasing probability of infection is marked after about three years of employment.

Additionally, among workers employed less than one year, physicians had the lowest prevalence of HBV markers. The statistical analysis included an interaction between the category physician and duration of employment. This interaction allowed for the unique analysis of the effect of duration of employment for the physicians. Risk due to duration of employment for the other occupational categories is assumed to be identical among the categories (and different from that of physicians) since interaction between duration and the other occupational categories was not statistically significant.

The risk of infection for all groups appears to rise with increasing duration of employment. As Figure 1 illustrates, the increase in the probability of infection begins to rise shortly after employment begins. Immunization early in the hospital career would therefore be most effective in preventing morbidity. Screening programs would be cost effective among employees who have worked in the hospital setting for nearly ten years. For example, fewer than ten percent of LPN's who have worked in the hospital for less than five years would be expected to be HBV positive. On the other hand, over 17 percent of the LPN's who have worked in the hospital for at least ten years would be expected to be HBV positive. In the latter case, screening would be cost effective since enough people are identified who can be dropped from the immunization program to balance the cost of the screening program, assuming \$30 for each person screened and \$100 for the complete vaccine.

It would appear from these data that the majority of HBV infections are sub-clinical or are not recognized as hepatitis. Only 20 percent of the subjects with positive serologies reported ever having had hepatitis. In addition only 50 percent of those reporting prior illness with hepatitis tested positive for HBV markers. Reporting prior hepatitis should not justify exclusion from serologic screening.

SUMMARY

A serologic survey of 419 workers from 33 South Carolina hospitals was conducted to estimate the prevalence of antibodies to hepatitis B surface antigen (anti-HBs) in this high risk group. Although the overall prevalence of seropositivity to anti-HBs was 10.39%, employees of small hospitals (less than 200 beds) had half the prevalence of

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positive serologic tests compared to hospitals with 200 or more beds (6.6% compared to 12.6%). Physicians were shown to be at highest risk of infection relative to other hospital workers, when controlling for sex, race, and duration of hospital employment. The risk of infection with hepatitis B virus (HBV) was shown to increase with increasing duration of employment for all job categories. Results indicate that immunization early in the hospital career would be most effective in preventing morbidity, whereas screening programs would be cost effective among employees who have worked in the hospital ten or more years. Curves of probability of HBV infection were constructed from the data to offer guidance for establishing policy regarding cost effective vaccine programs preceded by serologic screening for natural immunity to HBV. □

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CANCER IS NOT FOR SISSIES*

CHARLES W. KNOWLTON**

A few months ago a good friend of mine was bitten on the ankle by a poisonous snake while walking in her own front yard. She fully recovered after a few days in the hospital. Anne had an interesting comment to make: like many of us she had a horror of snakebite and she had always thought an episode such as that would be the most ghastly experience a person could have until it actually happened to her. She told me that the worst part of the experience was becoming an instant celebrity in Florence County. All the visitors in the hospital and the staff were clamoring to see the lady that got bitten by the copperhead snake. The very word cancer practically pulverizes us mentally. While it is a pretty tough ordeal that will extend one to the outer limits of endurance and fortitude, it doesn't have to be the end of the world or the person.

A well-known academician put it this way: "Not all of these tragic consequences together are the worst evil wrought by cancer. For everyone that is killed by the *fact* of cancer, many thousands of minds are unnerved by the *fear* of cancer. What cancer as an unsolved mystery does to the morale of millions who may never know its ravages is incalculable. There is an incident of cancer that cannot be reached by the physicians's medicaments, the surgeon's knife, or any organized advice against panic."

When a person keels over with a heart attack or stroke, things happen in a hurry. They cart him off in a noisy, garishly colored modified pickup truck to a place where people swarm around him like so many bees. With the discovery of a possible cancer, things often proceed at a much more leisurely pace.

In January, 1986, I went into my internist's office for my annual checkup. Things seemed to go swimmingly. The EKG was fine, the blood

pressure within the limits of normal, urinalysis okay and they told me some of the blood chemistry would take a few days, but I almost felt smug about such a good report at age 63. The doctor and I went back to his office to discuss the results and we each smoked a cigarette. I had to bum one of his because mine were in my jacket pocket out in the corridor. Seemingly as almost an afterthought, Jim said, "As a precaution why don't you stop by that radiology lab down the street and let them take a chest-x-ray. Here's a prescription for it." Like a good boy I did as I was told and went to the radiology lab for the final indignity of the day. This was a Wednesday. Thursday is Jim's day off.

On Friday, Jim called me at my office and I could tell from the tone of his voice what the verdict was before he even said it. "There's a spot on the apex of your right lung about the size of a half dollar and it's imperative that we explore that further." I said, "What could it be besides cancer?" "Well, it could be a fungus, a non-malignant tumor or," he added cheerfully, "it might just be tuberculosis, and that doesn't require surgery." The following Monday the testing began. Jim referred me to a pulmonary specialist who's about the age of my children. He first tested me with a bronchoscope. This sounds pretty ghastly, but isn't. He stuck a tube down my windpipe and then a tool which reached into my lung for tissue samples. The samples showed inflamed tissue but Danny said that was not conclusive and I had to be admitted as an in-patient for what is euphemistically called a needle biopsy. The bronchoscopy was a little annoying but not painful. The needle biopsy hurt like hell. Anesthetizing the surface of the skin didn't do too much for the muscles and tissues inside. What happens is that they take a needle designed for a horse, stick it into the patient's back and into the suspect portion of the lung and pluck out some tissue. I asked him why that couldn't be done as an out-patient. His cheerful response was that the procedure sometimes causes the lung to collapse necessitating some pretty rapid repair work. While I was there they gave me a bone scan, and found no abnormality. This procedure consists of injecting a ra-

* This personal narrative of a bout with lung cancer, written by a prominent South Carolina attorney, was submitted "with the hope that it might help somebody faced with the same situation."—Ed.

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dioactive substance into the patient. After a three-hour wait they give him a bone scan. The fact that mine was negative meant that if I had cancer it had not yet metastasized to my bones. In short, very good news.

Then we began the long wait for the results of the biopsy. The tissue samples had to be sent to a pathologist for analysis. Mildred and I began one of many long waits. As my bride of 37 years, college girl friend, World War II Red Cross girl while I was in the Navy, and mother of our four children, we have shared quite a lot. But immediately ahead of us lay one of our greater adventures.

Seven p.m. came and went and we concluded that Danny must not be coming around that evening. I was going to have to spend the night in the hospital anyway and I was concerned about Mildred wandering around in the dark parking lot, so I sent her on her way. Eventually Danny did come and told me in a calm, matter-of-fact way that I had a type of cancer that lends itself to cure by surgery and radiation, but not chemotherapy. That latter assertion was one bright spot in an otherwise dismal day. I have seen people go through chemotherapy and I hope that I never have to. I had to give Mildred the verdict over the telephone and it was unfortunate that we couldn't exchange hugs. I also called Number One son Bucky in Charleston to give him the news. Mildred called the others. The next morning Jim brought in the surgeon that he had recommended and we had a little chat after which I went home to continue to think about things. A day or so later I had to go to the office of the pulmonary specialist for some further testing. They wanted to ascertain my lung capacity and whether they thought I could tolerate a general anesthetic.

Mildred joined me for my final pre-op appointment with Dail, the surgeon. The game plan was to remove the upper lobe of my right lung. The right lung has three lobes and the left only two. Among other things he briefed me on what to expect in the recovery room and the intensive care unit. Without that I really would have been in for some massive shocks.

I had one major affirmative accomplishment in the two weeks between the time of the x-ray and surgery. I gave up smoking. That sounds so simple, but smoking is something that I had done regularly for over 40 years and with the advent of filters moved up to two or three packs a day.

There was no magic to it. I just thought it through carefully and agreed with myself that under the circumstances it would be ridiculous to continue smoking. I psyched myself up a bit, threw away the pack in my pocket and haven't touched one since. I didn't discuss it with anybody. Actually it wasn't as difficult as I would have anticipated and other events overrode what would have been the most difficult withdrawal period. I decided not to get the nicotine chewing gum that some people use to tide them over and decided to do it without a crutch. Now many months later I still don't have any desire to smoke again. Occasionally it occurs to me at a cocktail party, but I think the habit is really gone. I suppose fear is one of the stronger motivators that we have.

Another decision had to be made. Specifically, whether to have the surgery done in my hometown of Columbia, South Carolina, or go off to Houston, The Mayo Clinic, New York or heaven only knows where else. Doctors who were not on my case agreed with my conclusion that it would be better to have it done at home. While novel to me, the operation is not unusual at all and is done here every day. My son-in-law Paul, who is a physician in Jacksonville, Florida, agreed with my conclusion on this point. Some of the children wanted me to go to a more exotic spot for it upon the theory that we should turn all stones. However, the mental attitude of the patient is important and I would prefer to be sick at home rather than sick in some strange place. Also, I cringed at the thought of Mildred having to live out of a suitcase in a motel in a strange city.

At this point I stopped going to the office except to bring them up to date on my condition, and authorize them to tell the world about it, but I knew that I could not focus on any legal work. Furthermore, I have never wanted people hovering over me. Then after a round of handshakes and exchanges of anxious looks I went home to wait. The morning of the day that I was supposed to go into the hospital, I was killing time by switching channels on the television. I switched to a news channel just in time to see the Challenger rocket blow up. This was more cheery food for thought. The night before the operation Mildred and all four children plus daughter-in-law Nina came by my room for final hugs. We barely made it dry-eyed.

The next morning into surgery I went. I don't remember it, but Mildred says that as they rolled

me away I was heard to say, "Now for the grand opening."

As I had been warned, the low point was waking up in the recovery room. The anesthetic was beginning to wear off and my surgical wound was beginning to hurt like hell. There were tubes coming and going into and out of me. It seemed that I had more tubes than I had orifices. They evidently drilled a few extra. To cap it off, I couldn't speak. There was a tube down my windpipe and I was connected to a respirator. I dimly remember hearing Jim saying, "Damn it Charlie, you're letting the respirator do all the work. You're never gonna get off it at that rate." Whereupon I did a pretty good job of gasping with all of my remaining lung power. Fortunately they took me off the respirator before the day was over.

Intensive care is sort of an antiseptic purgatory where one is suspended between heaven and hell but closer to the latter. There were some post-operative complications and instead of two days in intensive care as anticipated, I spent two weeks there. In the ICU there is neither day nor night and half the time I didn't know which was which. It is noisy. The nurses chatter away and there is a clatter of utensils. The other patients, while not visible, are audible. My bed was in a very tiny room and the door was always open so that the nurses could look in at all the monitoring equipment that was set up just behind me. One of the major deprivations was that the tubes made it impossible to kiss Mildred so we did some pretty fervent hand squeezing for two weeks. In the private practice of law in a firm with thirty lawyers I am accustomed to being around a bunch of people all day long, and the isolation of the unit began to get to me. The family are permitted to visit only 15 minutes every two hours. In addition to that, Mildred spent heaven only knows how much time in a waiting room waiting for the surgeon to make his rounds.

All of this caused me to hallucinate every now and then. I remember thinking that I had been kidnapped and was being held against my will. Several times the nurses came over to restrain me from crawling out of bed. The nurses told Mildred that at one point I kept agitating to get out of bed because I had to go take a drink with Archie. I never had a drink with anybody named Archie in all my life. I can remember coming out of a daze at one point and finding my wrists tied to the bed rails. One very attractive young nurse came by

and seeing me in that condition gave me a wicked wink saying "that looks very kinky." My rejoinder was that "it's astonishing what goes on around here."

While the life of a patient in intensive care is in a state of suspense, the world keeps turning. It was at this point that Corazon Aquino headed a movement to evict the Marcos regime in the Philippines. One of the nurses in the unit is a Filipino and she got so excited she almost jumped out of her shoes. She always seemed to run to my television to catch all the news bulletins. While I felt that the world was leaving me behind, I was uplifted a bit by her natural and youthful enthusiasm.

It happens that I have a lot of friends who are physicians and they very kindly added me to their list of rounds. Every day they paraded in, bless their hearts. There were obstetricians, dermatologists, cardiologists, internists, surgeons of various types. It was very good therapy just to see my healthy medical friends trooping in and out. Through habit, I suppose, they read my charts, making remarks such as "I'm glad you got rid of the fever."

The pain is real and goes on for months. The most excruciating pain I ever had was passing a kidney stone. That had my undivided attention, but it lasted only four or five hours. The pain that I sustained in this situation was from the surgical scar. To give you an idea, they removed one rib completely and permanently. While not in the league with the kidney stone pain, this surgical pain is 60 minutes per hour, 24 hours a day, seven days a week. It was kept under control more or less, but sleeping was a sometime thing. The low point in terms of morale, ability to sleep and intensity of pain was usually about four o'clock in the morning every day, when I would take an extra pain pill.

My stay in intensive care dragged out into two weeks. There was an intestinal blockage which shut down my digestive system totally. Then Richard, a gastroenterologist, joined my medical staff. Thus, life on the I.V. continued on and on. After what seemed like an eternity, they declared me fit to go to an ordinary private room.

I thought that this called for a celebration, and in a day or so I persuaded son Bob to smuggle in some bourbon over the reluctant consent of the doctor and we poured a round. My stomach had better judgment than I did and rejected it imme-

diately. The principal excitement there was being rolled down to physical therapy every day. I almost had to learn to walk all over again and I could hardly make it across the room. A young lady, who sings in our choir and whose name I still don't know, a physical therapist, watched me hobble about 15 feet and issued me a walker. She watched me walk with the walker and after a few steps opined, "You don't need that." Then she issued me a cane. She watched me hobble with the cane and again said, "You don't need that," and took the cane away.

Be thankful for progress, though limited. I felt like someone who had been permitted to skip two grades in school. After a week in the private room they let me go home. I was still pretty incapacitated and still having to take pain medicine every four hours. I tried to walk a little bit more each day. First, it was just a matter of walking from my bed down the hall to the living room and back. Then I went outdoors with Mildred in tow and I managed to walk around the house one time. After a couple of days I managed to circumnavigate the house twice and did it twice a day. I kept trying to push back the horizons. After a bit I took to the street and worked it up to a block a day and bit by bit worked it up to a mile. They wouldn't let me drive a car for about six or eight weeks, and I assure you I had no desire to do so because any substantial upper body movement made me repent all my sins.

Then for the radiation therapy. They decided to give me 35 treatments. First they gave me 25 treatments, one per day, five days per week, and waited a week or so to see how I tolerated them. Then they gave me 10 more with greater intensity and more localized. They tattooed a trapezoid shape target on my right chest, shoved me under the machine and it sizzled me for about a minute on each side. This caused no pain, but it aggravated my already debilitated condition and it took a lot longer to recover from it.

Every thing is very clubby in the Oncology Department at the Baptist Hospital and I looked upon the other patients as my colleagues. Some of them were terribly emaciated and while this was depressing it also made me feel like Charles Atlas by comparison. Mildred would drive me to the hospital in the morning, I would take my therapy, walk to the office a block away and when I got

tired I would get a messenger to drive me home. I wasn't useful to the clients or partners for a while, but slowly things began to fall into place.

Going through this process I can't say that I came upon any profound revelations. I am impressed with what the Columbia medical fraternity can do and how professionally they go about it. One important lesson is that it is very important to resist the temptation to feel very sorry for oneself. The temptation still pops up and I have to fight it off. It is important because if a person thinks of himself as an invalid he will very likely become one. I was reminded how important friends are. They came by to see me at just about the right rate, a steady drizzle, enough to keep me from being unduly lonesome and not so many at one time as to become overpowering.

A source of support that had not occurred to me were people who have had the same operation, only a year or so earlier. There were three such people whom I knew pleasantly but not well who contacted me even before the surgery as well as afterward. There's a lot of indispensable advice that doctors can give, but there are some special insights that one can get only from a patient who survived.

The clergy were a big help to me. I really can't remember a specific statement that Dean Jack and Canon Boyd and Canon Susan said to me. I do remember thinking at the time that it was perfectly said and was what needed saying.

On the other hand, Mark Twain had a point when he wrote, "In certain trying times, desperate times, impossible times, profanity furnishes a relief denied even by prayer." My vocabulary has been doubly enriched by sea duty in the Navy in two wars. I think I used my entire nautical vocabulary during this period and my cubbyhole may have needed another coat of paint when they moved me out.

I don't intend to go around lecturing on the evils of smoking. I have stopped and I advise all others to do so, but that's where I will leave it. One of the greatest categories of a bore is a reformed anything—drinker, smoker, hooker, crook or whatever. I do not wish to become a bore.

I always used to hate sunrise as a civilian and in the Navy, but I now applaud each one that comes along.

Clearly cancer is not for sissies—or atheists. □

Editorial

WARING LIBRARY SOCIETY CELEBRATES TENTH ANNIVERSARY

Organized medicine in South Carolina began with the founding of the Medical Society of South Carolina in Charleston. In the 1790s, Drs. Robert and Samuel Wilson donated to the Medical Society a valuable collection of books which became the nucleus for a library. The library's fortunes waxed and waned. In 1950, Dr. Joseph I. Waring—then best known as a Charleston pediatrician—wrote: "The surviving books of the once proud library . . . now lie battered and scattered in several cubby holes in Roper Hospital and in the Library of the Medical College, with many pilfered items sprinkled in libraries and bookshops over the country." Dr. Waring had been appointed Librarian to the Medical Society, a position understood to be largely honorific. He chose to take the job seriously.

In 1979, a bronze relief portrait of Dr. Waring was unveiled in the Administration-Library building of the Medical University of South Carolina. Two years earlier, Dr. Waring had died in his sleep at the age of eighty. However, he was one of those rare, fortunate people who receive their just

rewards and recognition during their own lifetimes. In 1969, the Medical University not only made him the Distinguished Alumnus of the Year, but also re-named the library he had built in his honor (Figure 1). This library represented, in essence, a fusion of the rare book collections be-



FIGURE 1. Located on the Medical University campus, the Waring Historical Library occupies a small octagonal building once belonging to the Porter Military Academy.

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longing to the Medical Society and to the Medical University, and came to be housed in a small building on the school's campus in 1966. Speaking on the occasion of the unveiling of the bronze plaque, Dr. Albert B. Sabin remarked: "Were it not for Joe Waring, very little would be known about the medical history of South Carolina."

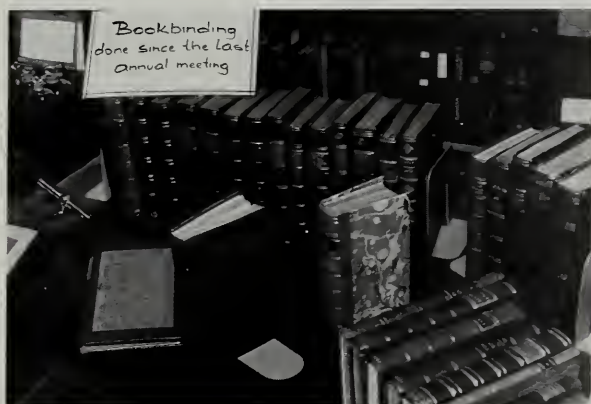


FIGURE 2. Preservation of rare books remains an important—but by no means the only—function of the Waring Library Society.

Today, his library is thriving and there is talk of up-dating Dr. Waring's monumental history of medicine in our state.

The library is worth a visit, if only for its rare book collection (Figure 2) and other exhibits. These symbolize our concern for the history of our profession—a concern which in part defines us *as* a profession. But the Waring Library is much more. The book collection now spills over into an Annex located in the main library of the Medical University, and provides a suitable atmosphere for local and visiting scholars. Medical students are showing interest in history, even though it is not required in their curriculum. And more recently, the library has been fortunate to obtain a distinguished director, Dr. Curtis Worthington. The preservation and growth of this rich heritage depends on private donations. Now celebrating its tenth anniversary and thriving, the Waring Historical Library is a credit not only to the Medical University but also to the entire medical profession in South Carolina. It deserves our full support.

—CSB

**ON THE COVER: "THE DEAN"
ROBERT WILSON, M.D.
1867-1946**

Robert Wilson was born in Stateburg in 1867, the son of Robert Wilson, M.D., D.D., and Ann Jane Shand Wilson, and the latest in a long line of Wilson physicians. He grew up in Maryland, attended the College of Charleston, and graduated from South Carolina College. After a trip abroad, he entered the Medical College of the State of South Carolina, graduating in 1892 as first honor graduate.

Upon graduation, Dr. Wilson joined the faculty of the medical college as Instructor in Bacteriology at a time when the "germ theory" was still considered just a theory by many of his colleagues. He was to serve his alma mater in various capacities until his death in 1946. His tenure as dean was the longest on record—from 1908 to 1943.

Perhaps Dr. Wilson's most lasting contribution was his leadership in persuading the state to make the Medical College a state institution. This was a masterpiece of diplomacy and laid the groundwork for the future development of the Medical University of South Carolina.

Dr. Wilson served not only his school but his community and profession throughout his lifetime. Some of the positions he held were City Bacteriologist for Charleston; Chairman of the State Board of Health; President of the South Carolina Medical Association, the Southern Medical Association, the Medical Society of South Carolina, the Tri-State Medical Association; and Vice President of AMA.

In 1895, Dr. Wilson and Charlotte Chisolm Cain were married. This union was to produce three children; two of these would carry on the family custom as physicians.

Dr. Wilson died at Roper Hospital on May 20, 1946. A memorial resolution passed by the Board of Trustees of the Medical College of South Carolina reads in part:



"Robert Wilson was an educated man in more than the ordinary sense. He was a cultured man and widely read and traveled. He was an outstanding citizen, physician, educator. His service, his example and accomplishments have influenced the lives of many who were associated with him. For many years after he has gone the many physicians who studied with him will carry with them the tangible and intangible evidence of his influence."

—BETTY NEWSOM
The Waring Historical Library



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MANAGEMENT OF THE HIV-INFECTED PATIENT*

CHARLES S. BRYAN, M.D.**

BOSKO POSTIC, M.D.

Not many generations ago, medical students heard the adage that "to know tuberculosis and syphilis is to know all of medicine." The acquired immunodeficiency syndrome (AIDS) now assumes such an identity. The many complexities of human immunodeficiency virus (HIV) infection might suggest that this problem ought to be dealt with entirely by specialists. However, more than 1,700 South Carolinians are known to be infected. Confrontation of this virus infection by primary care physicians therefore becomes a necessity. Our purpose is to review current concepts of management of the HIV-infected patient who does not yet have an AIDS-defining complication. Management of the more common infections associated with AIDS has recently been reviewed elsewhere.¹

WHAT TO TELL THE PATIENT

Let us assume that the patient has a *confirmed* positive test for HIV antibodies (that is, not only the screening test but also the Western blot test is positive). This signifies that the patient is infected with HIV and must be considered infectious. The frequent comment to such HIV serologic reactors that "you have been exposed to the AIDS virus" is vague and therefore misleading. Within 10 years, approximately one-half of HIV-infected persons will progress to AIDS and another one-quarter to one-third will experience the AIDS-related complex (ARC). Hence, HIV infection is extremely serious.

The physician may want to advise the patient of other counseling resources present in the community. The patient must be told, in language he or she can understand, the implications of the infection. Two concepts are important.

First, the HIV-infected patient must understand the ways by which the virus can be transmitted to another person. At present, we understand these to be but four: blood, sex, birth, and mother's milk. Although the virus has been isolated, *with great difficulty*, from other fluids including saliva and tears, the patient must understand that he or she should not be regarded as a leper capable of transmitting the virus through casual contact. However, it is the patient's responsibility to advise health care providers (including dentists and dental hygienists) of the need to take what we in medicine call "blood precautions." If the patient insists that such persons not be informed of his or her HIV antibody status, then "hepatitis B precautions" might serve as a euphemism. Operationally, what suffices to prevent the spread of hepatitis B also prevents HIV transmission. Similarly, the HIV-infected individual has the obligation to tell actual or potential sex partners of the risk. Sex should be carried out not only with a condom but also with a spermicidal jelly containing nonoxynol-9. If the patient refuses to advise sex partners who might have been exposed, the physician may notify health department officials. The SCMA Task Force's position is that the physician may also advise such third parties directly in special situations.

Second, the patient must comprehend that the problem is not "AIDS" but rather "HIV infection." "AIDS" is an arbitrary diagnosis defined by

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criteria set by experts. The definition of "AIDS" was made to help epidemiologists track the epidemic, not to help physicians take care of their patients. Similarly, the diagnosis of "ARC" (AIDS-related complex) is arbitrary. We have seen patients who do not actually meet the Center for Disease Control's criteria for AIDS who have more severe manifestations of HIV infection than do many who carry that diagnosis. The patient must comprehend the life-long host-parasite relationship between his or her helper (T4) lymphocytes and the human immunodeficiency virus.

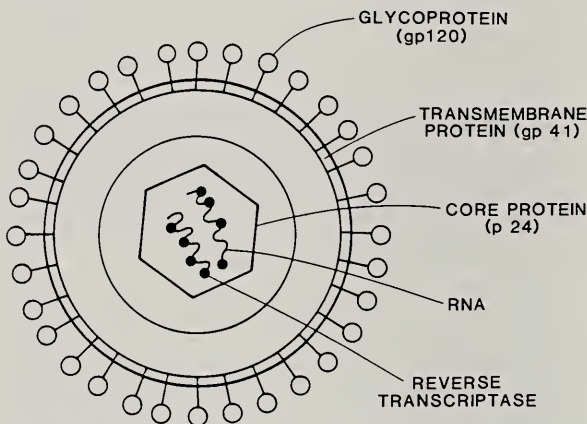


FIGURE 1. Like other retroviruses, the human immunodeficiency virus (HIV) contains the unique enzyme, reverse transcriptase. Among the various antigens identified by the Western blot method, the outer glycoprotein knob (the gp120 antigen) is especially important. This antigen binds specifically to the CD4 molecule on the surface of the T4 (helper) lymphocyte.

To drive home this second point and to understand the basis for current drug therapy, it is necessary to have at least a cursory appreciation of the infection's molecular biology. HIV is an RNA virus doing its mischief by virtue of the enzyme unique to retroviruses: reverse transcriptase (Figure 1). On the outer portion of the virus are knobs consisting of glycoprotein—the gp120 antigen by the Western blot test. Infection begins when this outer glycoprotein binds to a molecule on the surface of the helper (T4) lymphocyte, now known as the CD4 molecule. The T4 lymphocyte is the pivotal cell in the immune system, analogous to the conductor of an orchestra or the general of an army. It oversees and directs the wide range of activities that make the immune system "go." These include the activation of macrophages; the induction of natural killer and cytotoxic T cells; the facilitation of antibody production by B lymphocytes and plasma cells; and the assurance that

the system is kept in check by suppressor T cell activity. We continue to regard destruction of the T4 lymphocyte as the quintessential aspect of HIV infection despite the growing number of complexities and subtleties.

After binding to the CD4 molecule of the T4 lymphocyte, the virus loses its protein coat and passes into the cytoplasm. There, reverse transcriptase becomes active. Usurping the host's machinery, reverse transcriptase makes a copy of DNA of itself, which then becomes circularized and enters the nucleus of the T4 cell. There, it is incorporated as *provirus* in the host cell's DNA. Subsequently, the virus replicates, producing more virus particles. These acquire an outer coat by fusing with the host cell membrane prior to "budding" and leaving the cell to infect new cells. The cell is sometimes destroyed, and at other times becomes a factory for making new virus particles. It is on account of the virus' integration into host cell DNA that AIDS becomes a life-long

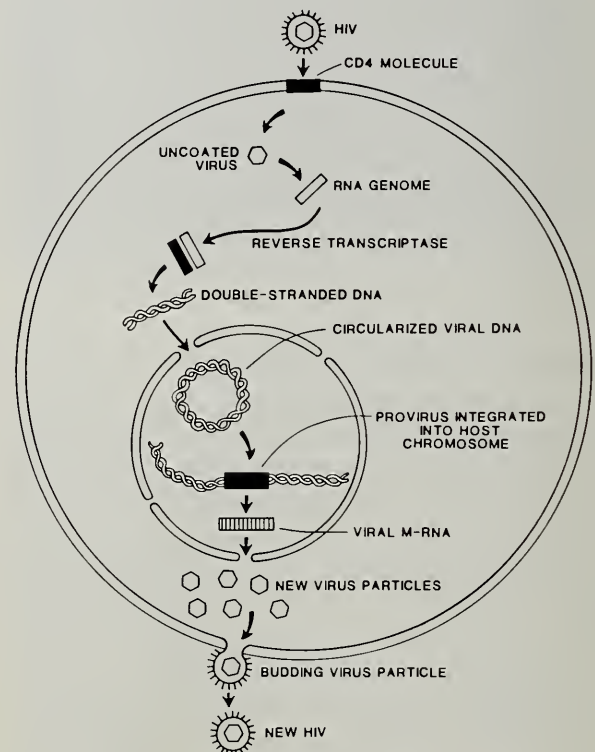


FIGURE 2. Life cycle of HIV within the T4 lymphocyte (see text). Reverse transcriptase enables the virus to forge a DNA copy of its RNA genome. The establishment of this DNA copy within the host chromosome as *provirus* explains our current inability to "cure" HIV infection.

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infection. Lacking a breakthrough in basic molecular biology, it is difficult to even envision a way in which an individual might be "cured" of AIDS.

The patient, then, must learn that he or she has a life-long condition, and that the problem is not so much AIDS as it is a life-long host-parasite relationship between his or her T4 lymphocytes and the human immunodeficiency virus. The patient may or may not have had the acute HIV infection syndrome, which is variably characterized by fever, sore throat, rash, leukopenia, abnormal liver function tests, and lymphadenopathy. The patient may or may not develop ARC (AIDS-related complex) on the way to development of AIDS. The criteria for ARC vary—lymphadenopathy involving more than one group of nodes is the most common manifestation, but other manifestations include oral candidiasis. AIDS is generally defined by the presence of an opportunistic infection or tumor, but other criteria have also appeared. The patient should be told that these disorders are generally spectacular. The patient will be prone to colds, transient diarrhea, bumps, etc., like everyone else.

THE HISTORY AND PHYSICAL EXAMINATION

The anxiety and uncertainty that beset the HIV-positive patient are probably without parallel in medicine. Therefore, we feel that these patients should be followed at regular intervals even when entirely asymptomatic. Although the frequency of follow-up visits depends to some extent upon the findings at the baseline evaluation and on the patient's level of concern, we generally recommend follow-up visits at three month intervals during the first year. Thereafter, the frequency can be decreased depending on the course of the infection and on patient preference. However, we feel that the security based on an ongoing physician-patient relationship assumes great moment in this condition.

These periodic visits need not be time-consuming. The history and physical examination should be focused specifically on HIV-related symptoms and signs. Let us review what ought to be included.

The *history* should begin with the patient's overall sense of well-being. *Persistent fever* (temperature > 101 degrees), *diarrhea lasting longer*

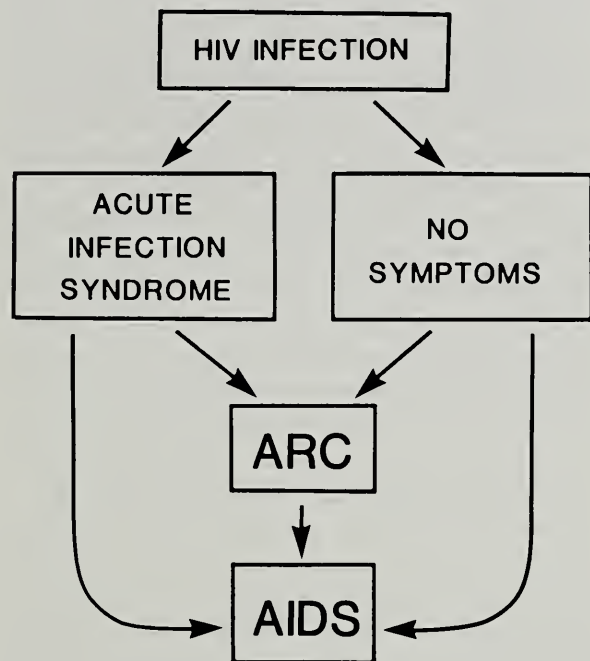


FIGURE 3. Before developing an AIDS-defining condition, the HIV-infected patient may or may not manifest the acute infection syndrome or ARC.

than three weeks, and loss of greater than 10 percent of body weight are unfavorable symptoms that suggest a high probability of progressing to AIDS within six to 12 months. Other symptoms to ask about are cough and shortness of breath (which can be the subtle presenting findings of pneumonia due to *Pneumocystis carinii*); headache, confusion, and decreased hearing (which can be the presenting findings of cryptococcal meningitis); blind spots (suggesting retinitis due to the cytomegalovirus); night sweats (which must be accompanied by fever in order to be significant); any localized pain or sores (including the rectal area, where herpes simplex is likely to occur); and of course depression.

The *physical examination* can likewise be targeted. One should carefully record the patient's weight (since weight loss is now incorporated into the case definition), blood pressure (remembering that Addison's disease due to adrenal infection by the cytomegalovirus has been reported), and respiratory rate (again recalling the insidious presentation of *Pneumocystis carinii* pneumonia in

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these patients). Always include a funduscopic examination to screen for new retinal lesions suggestive of cytomegalovirus retinitis. This should include examination of the macular area ("look at the light"), and any new abnormalities should prompt referral to an ophthalmologist. *Examination of the oral cavity is especially important because two lesions—oral candidiasis and hairy leukoplakia—correlate with rapid progression to AIDS.* The white patches of oral candidiasis (thrush) are familiar to all physicians and respond to topical therapy with nystatin (Mycostatin oral suspension) or clotrimazole (Mycelex troches). Hairy leukoplakia consists of white, filamentous projections—primarily representing clusters of the Epstein-Barr virus—on the lateral borders of the tongue. This recently-described lesion is easily recognized ("stick your tongue out to one side . . . now to the other side . . ."), and can be controlled if necessary with orally-administered acyclovir (Zovirax). Finally, examine the lymph nodes carefully. The presence of enlarged nodes (> 1 cm in diameter) in two or more noncontiguous sites (other than the inguinal areas) defines "generalized lymphadenopathy," which also correlates with progression to AIDS. The peri-rectal area should be examined for evidence of herpes simplex.

For routine purposes, this is about all that is required during these office visits prior to dealing with the patient's other concerns. To be sure, HIV-positive patients are prone to a wide variety of other conditions. For instance, they are more prone to oral conditions such as gingivitis and dental abscess and to dermatologic conditions ranging from mild seborrheic dermatitis to severe psoriasis. However, none of these latter findings have been clearly correlated with prognosis. In our experience, frequent meticulous examination of the chest, precordium, and abdomen is unlikely to be helpful.

LABORATORY TESTS: THE T4 COUNT

At the initial visit, one should obtain a complete blood count, sedimentation rate, and perform a tuberculin skin test. *Anemia, granulocytopenia, and elevation of the sedimentation rate correlate with rapid progression to AIDS*, especially in gay men. There are several other tests one might consider for completeness. These include serologic tests for hepatitis B, toxoplasmosis, and cytomegalovirus (generally available), and beta-2

serum microglobulin and the p24 core antigen level (generally not available, but suggesting a poor prognosis if elevated). However, at the present time the key laboratory test is the quantitation of T4 lymphocytes (also known as helper lymphocytes or as CD4 cells).

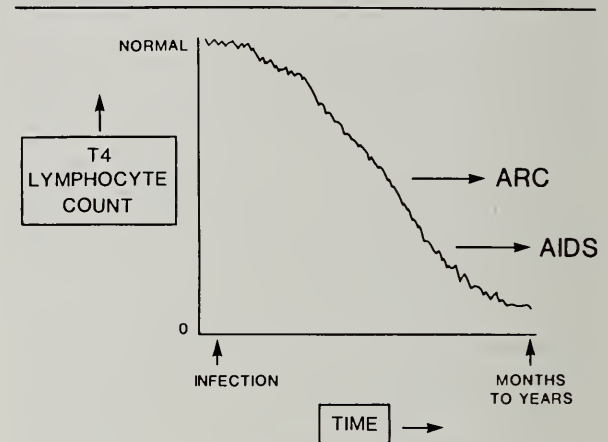


FIGURE 4. Decline in the T4 lymphocyte count occurs in nearly all HIV-infected persons and correlates with disease manifestations (AIDS and ARC).

The prognosis of HIV infection is inversely correlated with the T4 lymphocyte count. The T4 count declines in nearly all HIV-infected persons, although the rate of decline may vary (Figure 4). This test is quite expensive (at present, \$118 to \$228 in our area), and therefore how frequently it should be obtained becomes an issue. We currently suggest that the test be performed initially and then at six month intervals. A follow-up of 86 gay men infected with HIV infection indicated that the likelihood of progressing to AIDS within 12 months was 18.5 percent if the T4 count was below 299 per cmm. The risk was thereafter linear: 9.7 percent for a T4 count between 300 and 399; 3.7 percent for a T4 count between 400 and 549; and 1.5 percent for a T4 count greater than 549 per cmm.² Other data suggest that patients with T4 counts below 200 per cmm have a 30 percent likelihood of progressing to AIDS within 12 months, while patients with counts between 200 and 400 per cmm have a 50 percent likelihood of such progression within three years. At the present time, the greatest value of the T4 count is to facilitate the decision whether to start zidovudine (Retrovir; formerly known also as AZT) therapy.

ZIDOVUDINE (AZT) THERAPY

Zidovudine is the only licensed drug for HIV

infection. It was licensed for "the management of certain adult patients with symptomatic HIV infection (AIDS and advanced ARC) who have a history of cytologically confirmed *Pneumocystis carinii* pneumonia (PCP) or an absolute CD4 lymphocyte count of less than 200/cmm³ in the peripheral blood before therapy is begun." Unless there are contraindications such as pregnancy, we currently suggest that zidovudine be *considered* not only for AIDS patients but also for all HIV-infected patients with T4 counts below 200 per cmm. Arguments for early institution of zidovudine therapy (for patients who do not yet have AIDS-defining conditions) include: (1) prevention of opportunistic infections; (2) prevention of CNS disease due directly to HIV; and (3) better toleration of zidovudine if started early in the course of the HIV infection. Ongoing treatment trials should further clarify these points.

A false nucleotide, zidovudine terminates the incorporation of bases into the DNA molecule—that is, it is a chain terminator. Its activity against reverse transcriptase is selective. Therefore, one can use the drug to inhibit the virus. Unfortunately, it only inhibits viral replication. For reasons obvious in Figure 2, it has no effect on the provirus in the cell's nucleus. Therefore, to be effective, it must be given continuously.

Physicians using zidovudine should read the package insert; this review will touch only the high points. First, patients must take the drug regularly—every four hours—for optimal effect. This includes a middle-of-the-night dose. Electronic pill-counting devices may be helpful. Patients should not attempt to "catch up" or double up" if they miss a dose, since this will do little or no good and may increase the likelihood of toxicity. Second, they should not take over-the-counter medication without their physicians' knowledge. Drugs that are metabolized by glucuronidation in the liver (including aspirin and especially acetaminophen [Tylenol]) may increase the risk of toxicity.

Macrocytic anemia and granulocytopenia are extremely common during zidovudine therapy, and pancytopenia with bone marrow failure also occurs. The complete blood count should therefore be monitored frequently—initially, at least every two weeks. We encourage that patients take an active interest in their *hemoglobin levels* and *absolute granulocyte counts* (total white blood count X percentage of neutrophils [bands plus

segmented forms]). When the hemoglobin falls below 8 gm/dl, we generally give blood transfusions without reducing the dose of zidovudine. When the absolute granulocyte count falls below 1000 per cmm, we reduce the dose of zidovudine according to the severity of the granulocytopenia. In our experience, granulocytopenia is nearly always the dose-limiting factor for zidovudine therapy. We currently prescribe 900 mg per day (by alternating 100 mg and 200 mg doses every four hours) for absolute granulocyte counts slightly below 1000 per cmm, and 600 mg per day (100 mg every four hours) for granulocyte counts between 750 and 1000 per cmm. For more severe absolute granulocytopenia (< 500 per cmm), zidovudine should be discontinued temporarily or permanently.

In addition to trials designed to test new drugs, trials to clarify zidovudine regimens are in progress. Additional results of the placebo-controlled, double-blinded trial of zidovudine therapy for AIDS or advanced ARC, begun in 1986, were recently reported. At 21 months, 58 percent of the zidovudine-treated patients were alive compared to only 10 percent of patients who received placebo.³

Another approach is to use zidovudine with another agent. Recently, a results of a small study (six patients) indicated that zidovudine combined with acyclovir may be effective and well-tolerated. However, the authors specifically cautioned physicians not to use the combination "except as part of an approved research protocol."⁴

PNEUMOCYSTIS CARINII PNEUMONIA

At each patient visit, the physician should ask: "Does this patient yet have an AIDS-defining condition?" *Pneumocystis carinii* pneumonia (PCP) is the most common such condition. It is the initial AIDS-defining condition in 60 percent of patients and eventually occurs among 80 percent of patients with AIDS. Early diagnosis of PCP is extremely important, since patients who require intubation and ventilatory support for this infection experience near-uniform mortality. In the early stages of PCP, neither physical nor radiographic examination of the chest is likely to be helpful. Therefore, the physician must choose the most cost-effective approach to diagnosis, which ultimately requires demonstration of the parasite.

In our experience, bronchoscopy and transbronchial biopsy is generally necessary. In some

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centers (notably in San Francisco), PCP has been demonstrated with some regularity in smears made from induced, expectorated sputum. We have had some success with this technique. Several methods, including special pulmonary function tests and isotope scanning with gallium-67, have been used to assist the physician in predicting whether PCP is likely and bronchoscopy therefore necessary. Our current opinion is that these tests are cost-ineffective and that one should proceed to bronchoscopy if clinical grounds strongly suggest the diagnosis. Arterial blood gases (specifically, the pO_2) may be extremely helpful in making this decision.

At present, the standard recommended therapy for PCP consists of either trimethoprim/sulfamethoxazole (TMP/SMX; marketed as Bactrim or Septra, 15 to 20 mg per kg [based on the trimethoprim component] daily in divided doses either orally or intravenously) or pentamidine, 4 mg per kg, given once daily intramuscularly or—preferentially—by slow intravenous infusion. These appear to be equally effective. Unfortunately, side effects of TMP/SMX (notably, rash and marrow suppression) are more common in patients with AIDS compared to other patients. A cost-effective alternative regimen consists of dapsone (100 mg daily, at bedtime) combined with trimethoprim (Proloprim, 15 to 20 mg per day in divided doses). *The patient must be screened for glucose-6-phosphate dehydrogenase (G-6-PD) deficiency prior to the use of this alternative regimen*, since dapsone can cause severe hemolysis in G-6-PD deficient persons. The dapsone/trimethoprim regimen appears effective at least in patients with mild to moderately severe PCP, as defined by an arterial $pO_2 > 60$ torr on room air. It has not been compared to the other regimens in patients with more severe illness.

OTHER PROBLEMS IN THE HIV-POSITIVE PATIENT

One should not forget that HIV-positive patients are vulnerable to the same conditions that afflict everyone else. For example, one of our HIV-positive patients recently developed a pleural effusion and was found to have bronchogenic carcinoma. However, certain symptoms and signs suggest the need to consider specific AIDS-defining conditions. While diagnosis and management of these conditions now fills entire textbooks, a brief review seems appropriate.

Symptoms referable to the central nervous system raise especially the possibilities of cryptococcal meningitis, toxoplasmosis, and tumor (especially lymphoma). Of these, cryptococcal meningitis is the most diagnosable (by lumbar puncture) and treatable, although it unfortunately seems to require life-long therapy with amphotericin B. Alternatives are being studied.⁵ Diarrhea lasting longer than three weeks should prompt stool analysis for the usual enteric pathogens (including *Salmonella*, *Campylobacter*, and parasites), cryptosporidiosis (by special techniques), and disseminated *Mycobacterium avium-intracellulare* infection. In the latter instance, acid-fast bacilli may be demonstrated by AFB smears and cultures of stool, as well as by blood cultures using appropriate media. Dysphagia raises the possibility of esophageal candidiasis, which may respond to ketoconazole. Pulmonary symptoms suggest the need to consider tuberculosis, and indeed INH preventive therapy is recommended for all persons who are both HIV- and PPD-positive and who have not received prior treatment for tuberculosis.

Primary care physicians may of course choose to refer patients with diagnostic problems and more complex illnesses to specialists, and full discussion of these and other AIDS-defining conditions is far beyond the scope of this brief review. But we do wish to point out that the signs and symptoms of the more *treatable* AIDS-defining conditions are generally dramatic. Apart from the always-difficult problem of unexplained fever, the direction in which the evaluation should go is usually reasonably clear-cut.

SUMMARY

HIV-positive patients require periodic office visits with targeted histories and physical examinations. Zidovudine (AZT; Retrovir) should be considered for patients with T4 lymphocyte counts less than 200 per cmm, in keeping with FDA-approved indications. Management requires a high index of suspicion for *Pneumocystis carinii* pneumonia, awareness of the presenting signs and symptoms of other AIDS-defining conditions, and emotional support. With time, HIV infection may come to resemble diabetes mellitus: a chronic condition fraught with numerous complications including reduced life expectancy, yet by and large amenable to drug therapy. Management of most aspects of HIV infection, especially

in the early stages, is well within the scope of the primary care physician. □

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HIV PREVALENCE IN A MEDICALLY INDIGENT POPULATION*

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Exposure to HIV, the AIDS virus, in the practice of medicine is one of the greatest dangers that the physician faces today. The danger may be of more concern to the practicing obstetrician than to any other medical practitioner, due to the many possible routes of exposure to the HIV virus. The danger from a needle stick is readily apparent, but intraoperative blood or amniotic fluid exposure, exposure to vaginal discharge, or obstetrical delivery accompanied by splash contamination by blood or amniotic fluid are additional and common potential exposures to the HIV virus. Pre-marital testing, prenatal testing, and preoperative testing have all been proposed to help the obstetrician define the prevalence of HIV infection in his or her practice.

In an effort to determine the prevalence of HIV infection in pregnant patients attending maternity clinics sponsored by the South Carolina Department of Health and Environmental Control (SCDHEC), and determine a baseline HIV positivity rate, sera were submitted from 1,296 women attending SCDHEC prenatal clinics during the four weeks from January 18, 1988 to February 12, 1988. Those blood samples were screened for the presence of antibody to the HIV virus using the Enzyme Linked Immunosorbent Assay (EIA). Only one patient was positive for a positivity rate of .08 percent.

We believe this seroprevalence survey is of value to the practicing obstetrician in predicting the risk of exposure to the virus in his or her own patient population. Since the SCDHEC population is a lower socioeconomic, medically indigent population, the risk of HIV positivity in that population would, presumably, be greater than the

average obstetric practitioner is likely to encounter on a daily basis. In addition, it is important to consider that this rate of HIV positivity is significantly lower than the two percent positivity rates reported from an inner city population in New York City.¹

Regardless of the current positivity rate, it is extremely important that the obstetrician, and other medical practitioners, take steps to protect themselves and their staffs from the risk of acquiring the HIV infection. The information regarding blood and body fluid precautions in health care settings can easily be obtained from the American Hospital Association Report on AIDS/HIV infection² which deals with the subject.

At this point in time, due to the low prevalence rate, SCDHEC does not advise routine testing of prenatal patients unless risk factors for AIDS are present. These risk factors, adapted from the Surgeon General's report on AIDS, include: (1) women with clinical evidence of AIDS, (2) IV drug abusers, (3) women born in countries where heterosexual transmission is thought to play a role in the transmission of AIDS, (4) prostitutes, and (5) female sexual partners of bisexuals, men born in countries where AIDS is prevalent in the heterosexual population, hemophiliacs, and men with HIV infection.³ Further seroprevalence testing will occur in SCDHEC clinics on a regular basis and further reports will be provided as the data become available. □

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SOUTH CAROLINA FLORISTS DERMATITIS: CASE REPORT AND SURVEY RESULTS*

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In October, 1987 a task force of the Society of American Florists was organized in the Washington, D.C. and Baltimore area. Its purpose was to investigate increasing numbers of cases of severe dermatitis among floral workers. Dermatologists at Hershey Medical Center and National Institute of Health confirmed the role of sap from the flower *Alstroemeria* in several clinical cases and recommended case/control epidemiologic surveys to assess the problem.^{1, 2, 3}

FIRST SOUTH CAROLINA CASE DIAGNOSED

The patient is a 66-year-old white female who had worked as a floral arranger for 30 years without skin problems of the hands except for infrequent cuts and scratches. Her job as floral arranger required her to cut stems of greenery and flowers with a sharp blade held in her right hand using the thumb as a backstop during which sap would extrude from the flowers onto her fingers and thumb. Other occupational tasks included threading thin wires along the stems of fragile flowers and anchoring the stems of plants into a plastic floral foam material (Oasis[®]). The patient had been exposed to various species of ferns, plants and flowers, and also to floral preservative sprays, knives, scissors and serrated cutting shears. In addition, her hands were exposed to excessive hand washing between floral arrangements.

About three years before diagnosis, the patient developed itching and redness of the right thumb and forefinger leading eventually to roughness,

drying, cracking, bleeding and extreme tenderness of both hands. The problem became so severe at one point that she was unable to use her hands for fine tasks including eating. She was treated symptomatically with a variety of steroid preparations for several years without relief.

Her past dermatologic history included sulfa drug allergy and "nervous" hives. She had no history of hay fever, asthma or eczema. On physical exam her dermatitis was concentrated on the thumb and forefingers of both hands sparing the little fingers, the forearms, the neck and face. Patch testing gave a 2+ (strong edematous erythematous) reaction to the sap of the *Alstroemeria* stem and the leaf and a negative reaction to the vaseline control (Figure 1).

Since diagnosis, the patient has begun to work in vinyl gloves and has decreased her contact with *Alstroemeria* with great improvement of her symptoms.

SOUTH CAROLINA FLORISTS DERMATITIS SURVEY

The South Carolina Retail Florist Association



FIGURE 1. Patch Test results 48 hours after application of *Alstroemeria* stem and leaf to unbroken skin. "V" is for vaseline control.

* From the Agromedicine Program of Clemson University and the Medical University of South Carolina.

** Address correspondence to Dr. Stanley H. Schuman, Agromedicine Program, Department of Family Medicine, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.

asked for help to assess the problem in South Carolina. Eight questions concerning dermatitis in floral designers were sent to 671 active retail florists. This was followed by telephone interviews of a non-random sample of 36 out of 91 floral designers identified by the employer as having skin problems of the hands. The telephone interview included questions concerning history of skin disease, diagnosis, treatment, outcome and exposure to *Alstroemeria*.

RESULTS

Thirty-five percent (235/671) of the questionnaires were completed and returned. Mail results are presented in Table I and telephone results in Table II. No case was reported in which *Alstroemeria* was identified as the allergen by a physician using a patch test. Many respondents expressed appreciation for medical concern with their occupation. A few offered written suggestions for further study, including questions regarding pesticides which might have been used on flowers which are imported from other countries.

DISCUSSION

Our survey confirms the recent Eastern Maryland report on the prevalence of florist dermatitis of approximately eight percent, an estimate based on one of three florist shops, reporting one out of four employees with skin problems of the hands.³ Any investigator would be daunted by the multiple possible natural and man-made chemicals to which floral designers are exposed. It is understandable that few physicians have tried to identify the allergens responsible through systematic skin testing.

At greatest risk within the floral industry are the floral designers. National Institute of Occupational Safety and Health investigators have tested workers in large floral operations and found positive tests primarily in designers.² Pesticide residues on the flower seem an unlikely cause, because handlers of the unbroken flower in bulk (shippers, packers, U.S. growers, and other non-designers) are not affected by the rash.

Alstroemeria appears to be an infrequent but severe cause of preventable contact allergic dermatitis in floral designers. The allergen is an unsaturated lactone, alpha methylene gamma butyrolactone (Tulipaline A) which has been isolated

TABLE I

Survey Results From 235 Retailers With 741 Designers

Retailers using <i>Alstroemeria</i> (205/235)	87%
Retailers with at least one employee with skin problems of the hands (60/235)	26%
Designers with skin problems of the hands (91/741)	12%
Designers with serious* skin problems of the hands (40/741)	5%
Designers who quit working due to skin problems of the hands (9/741)	1%
Designers wearing gloves (16/741)	2%

* Serious = missed work, took medication, went to physician

TABLE II

Results of Interviews With 36 Designers With Dermatitis of the Hands (36 of 91 Listed in Table I)

Missed work (6)	17%
Took medication (33)	92%
Over-the-Counter (33)	92%
Prescription (19)	51%
Treated by a physician (19)	51%
Family Medicine (6)	17%
Allergist (3)	8%
Dermatologist (13)	36%
Other: internist, emergency medicine (3)	8%
Patch-Tested, but not to <i>Alstroemeria</i> (5)	14%

from several related plants in addition to *Alstroemeria*.^{4, 5, 6, 7} All species of the genera *Alstroemeria*, *Erythronium*, *Sagea*, *Bomarea* and *Tulipa* are considered allergenic because they contain substantial quantities of this chemical.^{8, 9} The chemical is highly concentrated in the tulip bulb and a similar clinical entity known as "tulip finger" has been well described.^{10, 3} *Alstroemeria*, commonly known as the Peruvian Lily, is a monocot and a member of the order Liliiflorae and the family Alstroemeriaceae. The family Alstroemeriaceae consists of four genera and over 200 species. This family was formerly included in the Amaryllis family, Amaryllidaceae which is closely allied to Liliaceae and Iridaceae. Biochemically and botanically the plants are very similar.⁴

Once hypersensitivity is diagnosed, the allergenic sap of the plant needs to be avoided. Though Marks has shown that nitrile gloves offer more protection than latex gloves,¹ few floral designers find it feasible to work in gloves of any type due to decreased dexterity. However, florists can reduce exposure by keeping alstro flowers and

FLORISTS DERMATITIS

storage containers separate from other flowers. Also containers and tools can be chlorine-rinsed daily to limit inadvertent exposure.

In summary, we conclude that: (1) skin problems of the hands are prevalent among floral designers in South Carolina; (2) a minority have skin problems of the hands severe enough to give up their occupation; (3) Alstroemeria is one potentially identifiable preventable cause, easily diagnosed by patch test on the unbroken skin; and (4) physicians should be alert to alstrodermatitis among amateurs as well as professionals who work with flowers.

ADDENDUM

Since this manuscript was submitted a second case of contact dermatitis was confirmed in a 34-year-old florist by patch tests: 2+ for alstroemeria stem, 2+ for tulip stem, negative for Floralife^R preservative, gladiola stem, and chrysanthemum stem. □

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USING MEDICAL MARKETS TO STIMULATE THE RURAL ECONOMY*

JOSEPH M. PRINZINGER, Ph.D.**
GEORGE A. UHIMCHUK, Ph.D.

Medicaid is an entitlement program that supplies health care to persons who meet monetary and medical eligibility criteria. Most of the Medicaid clients are either the very young or the very old. Medicaid was established nationally in 1965 through Title XIX of the Social Security Act. Three years later South Carolina government started providing Medicaid services to 39,900 people. Today the State Health and Human Services Finance Commission contracts for Medicaid services for approximately 235,000 clients with an annual budget of nearly a half billion dollars.

South Carolina Governor Carroll A. Campbell's 1987 State of the State address set the pursuit of economic development as a major goal for South Carolina. This article addresses economic development through the market for medical services. Medical care in South Carolina is a major sector of the state's economy, and of that, Medicaid is a significant proportion. Common opinion is that Medicaid is strictly an entitlement program that pays for medical care for the poor with no other effects on the state's economy. Our hypothesis is that Medicaid expenditures go beyond the payment for medical care and permeate the state's economy, creating jobs and income.

THE THEORY

Income is derived from the production of goods and services. A basic tenet of economic theory is that as additional demand (called "aggregate demand" because it is a demand for all goods and services) enters a particular geographic area, income and employment will rise in that specific area. The opposite effect is equally true. Income and employment will continue to rise in surround-

ing areas, known as the Cantillon Effect, eventually rippling out into the overall area much like the circles which expand out when one throws a pebble into a pond. This influx of demand can come from many sources. Of course, in the conventional economic development model it comes from the production of goods or services that are then, at least in part, exported out of the state. With Medicaid, aggregate demand flows into the state from the federal government. Under Medicaid rules, the federal government supplements federal dollars to state dollars at a given rate, known as the "Medicaid match rate." Federal dollars coming into South Carolina are an injection into the state's economy. Aggregate demand rises inside of the state receiving Medicaid expenditures and circulates creating decreasing waves of increased income changes.

A new dollar spent in a local economy eventually creates more than a dollar's worth of income and jobs. This is due to the fact that after that dollar is spent it winds up being someone else's income. The person receiving that dollar spends part of it (part of that dollar is saved and part is taxed) which in turn winds up being someone else's income. This process continues until all of the original new dollar leaves the local economy through either savings, taxation, or buying of goods and services imported from outside of the local area. Economists call this a multiplier effect. The originator of this concept as applied to both local and national economies was Sir John Maynard Keynes. It is, therefore, known as the Keynesian Multiplier.

EMPIRICAL ESTIMATION

For South Carolina the Keynesian Multiplier was estimated using various measures of taxation, sales, value added, the saving rate, and income levels. The data for calculating the South Carolina multiplier were collected and compiled from several sources. The base data for the calculations are

* From the State Health and Human Services Finance Commission.

** Address correspondence to Dr. Prinzinger at the Office of Medicaid Program Development, State Health and Human Services Finance Commission, P. O. Box 8206, Columbia, SC 29202-8206.

Nominal Personal Income for South Carolina (supplied by the State Budget and Control Board, Division of Research); South Carolina Retail Sales (from *Survey of Buying Power*, by Sales and Marketing Management of New York City); Value Added by South Carolina Manufacturers (from *Economic and Related Statistics for South Carolina*, U. S. Bureau of Census, Department of Commerce); South Carolina Tax Collections (from the *South Carolina Statistical Abstract*); Federal Government Tax Collections (from *Annual Report* of the Commissioner and Chief Counsel of the Internal Revenue Service); and the Consumer Savings Rate for South Carolina (from "Estimating State Sales Taxes On Business Purchases: Methodology and Validations" by Sarah J. Uhimchuk, 1986).

We estimated that the simple Keynesian multiplier for 1982 was 3.47, although for 1983, the most recent year that complete data were available at the time of our investigation, our calculations result in a Keynesian multiplier of 3.78. The weighted average of these two (3.62) is used for the calculations that follow.

The federal government matches each dollar of state money spent on Medicaid with an additional \$2.70. Therefore, for each additional dollar of state money a total of \$3.70 is spent purchasing health services for South Carolina Medicaid clients.

To calculate the full economic impact of additional Medicaid spending, it is necessary to treat the state dollars separately from the federal dollars. South Carolina is a balanced budget state; every dollar expended on Medicaid by the state is equally matched by a dollar taxed by the state. This exactly describes a special case of the Keynesian multiplier known as the balanced budget multiplier (BBM).

As noted earlier, the Keynesian Multiplier is bidirectional. Therefore, the monies collected by taxes reduce aggregate demand and lower income and employment in the state of South Carolina. It would first appear that a dollar spent by a balanced budget government would exactly offset the dollar taxed by the same government with the net effect being zero. But that is not the case, because by definition, a balanced budget government spends an amount exactly equal to the revenue it collects; therefore, there are no funds leaking out of the system (Keynesian leakages)

associated with balanced budget governments. As it turns out, the mathematics associated with this spending pattern calculate out to a BBM of 1.0. In an intuitive sense, this is because government merely interrupts a step in the geometric progression (which is what the Keynesian multiplier is). When the government levies taxes, it takes money out of the local economy thereby reducing aggregate demand. By purchasing an equal valued amount of goods and services, aggregate demand is increased by exactly the amount that it was reduced in the taxing process (the normal leakage in each step is hence removed). This leaves the geometric progression the same but with an addition of an increase in government services. As you can see, the overall effect is an increase exactly equal to the amount of government purchases brought, or 1.0. Of course, there is a rearrangement of the mix of public and private goods, and the government purchases must come from non-utilized resources.

Thus, the dollar spent by the state government will create one more dollar in income in the local economy. However, when the federal government matches it by \$2.70, this expands the economy by the whole Keynesian Multiplier (the federal government is not a balanced budget government) because changes in federal government spending on South Carolina Medicaid are not directly related to the federal taxes collected in the state of South Carolina. Indeed the Keynesian multiplier states that the \$2.70 will create 3.62 times that amount of money or \$9.77 of local income for the federal government portion of the income expansion. That is, the dollar spent by the state will eventually create one dollar of added income to South Carolina residents for the state part of the match and \$9.77 for the federal government part of the match or a total of \$10.77. If that is not enough of a bargain, South Carolina received the additional income by treating sick poor people who qualify for Medicaid.

If this process creates additional income, then doesn't it also generate additional tax dollars? Indeed it does. The tax rate that the state government receives from the residents of this state (includes individual income tax, corporate income tax, and the retail sales tax only) is 5.1 percent. Thus the state government gets back 55 cents (5.1 percent x \$10.77) for every state dollar it spends on Medicaid. That is, on net, the state

THE RURAL ECONOMY

government has to spend only 45 cents to receive these benefits. If this seems like a bargain, then including local taxes as another tax-enhancing factor in this Medicaid scenario seems like a steal. For both state and local taxes, the tax rate for South Carolina is 7.5 percent. Therefore, for each state dollar spent on Medicaid, state and local governments get back 81 cents (7.5 percent x \$10.77). Therefore, looking at tax revenues as a whole, for a net cost to the taxpayer of 19 cents, the state receives \$3.70 worth of health care for Medicaid clients and also receives an increase of \$10.77 to the income of South Carolina residents. This is shown in the chart.

SUMMARY

A major concern for South Carolina state government is how to develop the state's economy. Rural development is particularly stressed because rural development is very hard to accomplish. It is because of this simple fact that all alternatives to rural development must be explored. Of these, expanding Medicaid services is often ignored. Yet the infrastructure to exploit this form of economic development is already in place. By taking advantage of this existing infrastructure, income and jobs can be created quickly in some of the poorest and most rural parts of the state with little cost to South Carolina state

CHART I

Effect Of A Dollar Of State Money On The Economy Of South Carolina If Spent Through The Medicaid Program

State Money	Federal Match	State Medicaid Dollar	Keynesian Multiplier (BEM)	Change To State Income Level
\$1.00	\$2.70	\$1.00	X 1.00	= \$1.00
State Money	Federal Match	Federal Medicaid Dollar	Keynesian Multiplier	Change To State Income Level
\$1.00	\$2.70	\$2.70	X 3.62	= \$9.77
State Tax Rate	Amount Back To State Taxes	Net Amount Necessary State Tax Only	State and Local Tax Rate	Amount Back To State and Local Taxes
5.1%	\$0.55	\$0.45	7.5%	\$0.81
Net Amount Necessary State and Local Taxes				
\$0.19				

government. Indeed, taking account of the favorable federal match dollars, a labor intensive Medicaid medical market, and counting enhanced tax collections for both state and local governments, a policy of economic development through expansion of the Medicaid program is, for all purposes, a real bargain because it increases state income, jobs, and health care to the poor for a relatively low cost to South Carolina citizens. □



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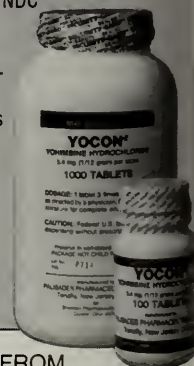
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Editorial

MEDICAL ECONOMIC RELATIVITIES

The article in this issue by Drs. Prinzinger and Uhimchuk entitled "Using Medical Markets to Stimulate the Rural Economy" may appear very mundane to many. However, it demonstrates very nicely that medicine is an extremely positive force in the American economy.

During these last years of the great cost containment drive, we have heard repeatedly that medical costs should not exceed a certain percent of the Gross National Product. This is usually quoted at around ten percent, and great fears are raised because it has risen slightly above the figure. You hear such facts as, "no other country spends this percent on medical care." The general tenure and intent of these statements is to create a negative feeling toward expenditures for medical care. In actuality, increases in medical expenses is a very positive event and this article portrays one of the positive aspects of increased medical expenditures.

There are many causes for the increase in medical expenditures but there are three major ones. One is that our population is aging. This aging comes about because medical science has helped extend life from an average of forty years around the turn of the century to figures that now exceed seventy years. This aging population has problems of a complex nature which often require multiple medications or complex procedures. Another big factor is modern medicine itself. There are treatments for many conditions and diseases that did not exist ten years ago. These procedures involve the very vital organs of the human body and require a large support team and complex machinery to carry them out. The proof of the pudding, however, is that people take these multiple medications and undergo these complex procedures. Obviously they do it because it makes them feel better, improves their lifestyle, and helps them live longer. The third cause is what economists call a superior good. A superior good is one that sales, as a percentage of income, rise as income rises. What we are seeing is that as real income (after inflation income) increases in this

country, people want to spend a higher percentage of their income on their health (this is why the number of health clubs has increased). That is, people feel that medicine is a superior use of their additional income and hence want more of it. Any reforms which hinder this trend make these people worse off by blocking their ability to purchase a good that they prefer.

Furthermore, there is an economic dictum called "increasing marginal costs" which states that in the production of anything you use first the resources that cost you the least. It is based on the actual reality that occurs when you confront a large number of problems. You always solve the simpler one first and gradually work toward the more complex. In the case of medicine the simple solutions have been done by now. These tend to be relatively low cost procedures. Through increasing scientific knowledge, medicine is tackling the more complex illnesses and diseases, the ones with ever-increasing costs per case.

The great strides made in America against infectious disease, poor nutrition, and control of chronic disease have certainly added to our longevity as well as to a better lifestyle for all of us. Those cases have been helped and the complexities in today's multi-system disease and vital organ malfunctions drift into the more costly procedures and medications.

Medical science and its application is a very positive part of our economy. We should expect its percent of GNP to gradually increase as the rewards increase and the results get better; if not, some people are going to suffer and die who could have been saved. To say that spending money on medical care is pouring it down a rat hole and that it should be capped immediately or even lowered two percent a year for the next four years is contrary to all good economic theory. Drs. Prinzinger and Uhimchuk amply demonstrate that medical dollars flow into our economy and multiply themselves many times. This adds capital flow to the community and does not bleed capital and cash away from the community as do many other

products.

We are proud of the expertise of our medical science, and we are proud of the positive economic impact we have on the communities in which we practice. The policymakers of our state and nation also need to know this to offset the negative press and attempts to place caps on our ability to deliver modern medical care to our patients. Additionally, our legislators should view expenditures in health care as an investment that

produces economic revenue as well as the enhancement to our citizens' lives.

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Guest editorials express the opinions of the authors and do not necessarily reflect the opinions of the Editorial Board and the leadership of the South Carolina Medical Association.

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The following SCMA physicians are recent recipients of the AMA's Physician Recognition Award. The award is official documentation of Continuing Medical Education hours earned.

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LETTERS TO THE EDITOR

To the Editor:

I would like to comment on the article by Dr. John B. DuBose, Chairman of the Review Committee of the South Carolina Professional Review Organization in the June 1988 edition.

Dr. John DuBose has sent letters to several of my elderly patients with multi-systems diseases stating that Medicare would not pay the hospital bills, and the patient, likewise, would not have to pay the hospital bill. These letters terrorize this group of patients as they know that they might get in emergency situations again and need hospitalization, and their reaction may be that they will refuse to go to the hospital again knowing that the hospital will not be compensated.

It is my feeling that Dr. DuBose and the medical consultants should be subject to suit and liability just as I am in the practice of medicine. I feel that we are working under two separate set of standards; one being that I am subject to liability when they are not, and I would certainly feel much better about the SCPRO if we all practiced under the same rules. Certainly, they are being consultants to earn a livelihood just as I am seeing patients to earn a livelihood.

FRANK B. LEE, SR., M.D.
511 S. Dargan St., Suite 1400
Florence, S. C. 29501

Dr. Lee's letter was referred to Dr. DuBose, whose response is as follows:

I agree with Dr. Lee that letters from the PRO to beneficiaries (patients) often times confuse and alarm them. These letters are required by the PRO legislation enacted by Congress. The wording in them has to be approved by HCFA. I have complained about the necessity of sending letters to beneficiaries in correspondence to our congressional delegation. I think that there is a potential for interfering with the doctor/patient relationship and, as Dr. Lee suggested, may cause some elderly patients to delay seeking medical care when it is warranted.

I cannot agree with Dr. Lee's suggestion that physician consultants be subject to suit and liability as long as they are performing their review function in a consistent and ethical manner and

that due process is followed. Fortunately, the Congress has adopted safeguards to protect physician consultants from unwarranted legal action as long as they are performing their peer review duties as mandated by law. I think it would be extremely difficult to recruit any physician to serve on a hospital Peer Review or Quality Assurance Committee or work for any peer review organization without such legal protection. I think Dr. Lee has lost sight of the fact that South Carolina physicians who are working as consultants for the PRO earn their living seeing patients in their offices and hospitals just as Dr. Lee does. They do not earn their primary income from the peer review organization. Most of these fine doctors have taken on this responsibility of peer review as a duty to the profession and public at large rather than as a source of additional income. Every community has its physicians who are willing to do this thankless work. They are the same people that will serve on various committees and their hospital staffs and serve as officers often dealing with the day in and day out administrative problems that arise that only a physician can take care of while also serving their patients in their practices. There is also a large group of physicians who never serve on any commission, board, committee or hold office on their medical staffs. These people are more than happy to let others do the difficult work for them. They are not interested in the issues or the public good at large but more in their own financial success. They do not take the time to study the law or understand the process. Just let them feel some threat to their autonomy or pocketbooks, however, and you can hear them scream loud and clear that they or their patients are being persecuted. Perhaps the time has come for people to do a little studying and understanding.

It is time for the physicians of South Carolina to learn that they can get whatever kind of peer review they want. They can do it themselves, or they can let others do it.

JOHN B. DuBOSE M.D.
1344 Haile Street
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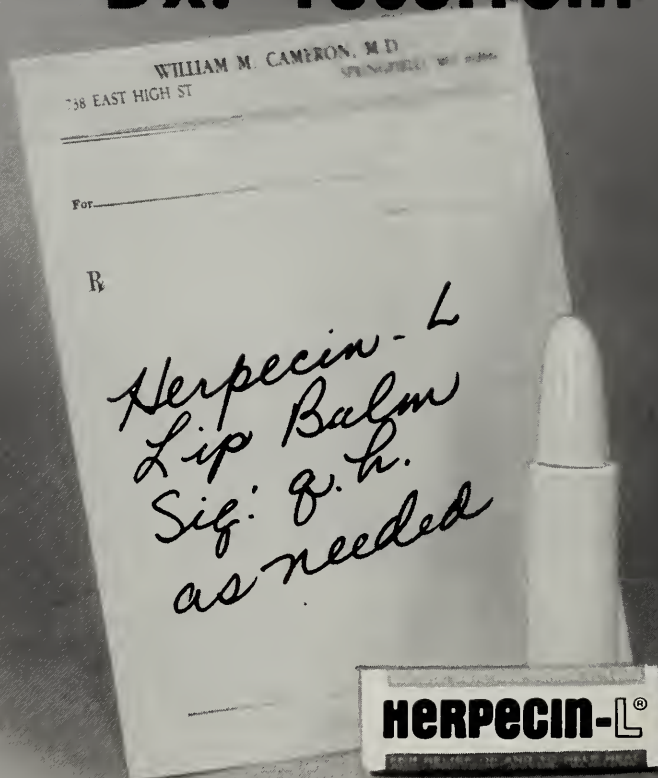
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ENDOSCOPIC LASER THERAPY FOR OBSTRUCTING GASTROINTESTINAL TUMORS: A PERSONAL EXPERIENCE

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During the last decade two important technological advances have occurred which today are playing an ever increasing role in the palliative management of gastrointestinal tumor therapy. The first, of course, is the introduction and continuous improvement of the flexible fiberoptic endoscope which has allowed direct vision of tumors in the upper and lower gastrointestinal tract. These instruments now come in a variety of sizes and include either one or two separate channels for biopsy, suction, or the introduction of probes which allow for therapeutic manipulation in the gastrointestinal tract.

The second major revolution has occurred more recently, but has taken its initial stimulus from theoretical physics of the early twentieth century as espoused by Einstein and Planck. This technology has evolved into the LASER (Light Amplification by Stimulated Emission of Radiation) and now has been refined further into various specific modalities (CO₂, Neodymium-YAG, Argon) depending on the type of tissue or application of energy needed. Excellent reviews¹⁻⁴ have been written on the application of LASERs in medicine and at this point many specialties including surgery and gastroenterology are benefiting from the application of these technologies.

The specific use of endoscopy and the Nd:YAG

has opened up new therapeutic modalities for patients with obstructing gastrointestinal neoplasms who otherwise are not candidates for significant resectional therapy.⁵ Neoplasms of the esophagus, stomach, duodenum, ampulla, colon and rectum have been treated with endoscopic laser therapy. The use of therapeutic ablation by the endoscope is attractive and appealing for several groups of patients. In patients with advanced disease who are not curable by conventional surgical oncologic techniques, endoscopic ablation of an obstructing GI tumor can provide adequate palliation without the need for major surgical resection or anesthesia. In these groups of patients, whose outlook for long-term survival is minimal, the quality of life can be improved if the obstructive component is treated without the need for operative diversion or placement of gastrointestinal tubes. Finally, repeat therapy can be given using endoscopic ablation of gastrointestinal tumors as the need for repeat tumor reduction continues. This therapy can be complemented by the placement of dilating devices which maximize luminal diameter or which allow for stents to be placed through tumors, especially in the management of esophageal cancer.

METHODS

Using conventional fiberoptic gastrointestinal endoscopy, a flexible wave guide is passed through the biopsy channel which has been designed to transmit the appropriate LASER energy

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which is either in direct contact with the tumor or is given as "non-contact" by applying LASER energy approximately one centimeter from the tumor. If a significantly high grade of obstruction is noted, especially in the esophagus, a flexible guide wire may be placed allowing graduated dilators (Savary dilators) (Figure 1) to be advanced through the tumor in order to establish a channel that will allow for passage of the endoscope and subsequently LASER therapy. The LASER energy is then pre-selected depending on the modality (contact or non-contact) which is used. We have preferred the contact probe since this allows for low power (10 to 15 watts) and more direct application of laser energy to the tumor. Through repeated applications of specifically designed contact probes, vaporization of the obstructing tumor is achieved with minimal charring and surface bleeding. Patients may be returned again to the operating room or endoscopic suite for repeated LASER therapy and this is generally well tolerated using intravenous sedation or topical anesthesia in most patients. These methods may be applied specifically to obstructing esophageal tumors as well as tumors of the rectum and lower colon.

RESULTS

During the last twelve-month period, fifteen patients have been treated using the Nd:YAG LASER in a contact mode for the treatment of either obstructing esophageal (11 patients) or obstructing rectal tumors (four patients) at both the Richland Memorial Hospital and the William Jennings Bryan Dorn VA Hospital, under the direction of the Surgical Service and Surgical Endoscopy Service of the University of South Carolina School of Medicine (Table 1). These patients were all deemed to be unresectable due to advanced neoplasia or significant cardiac or pulmonary disease which contraindicated major resectional therapy. All patients with esophageal obstruction presented with significant dysphagia and either were totally obstructed or could maintain nutrition only with liquid diet. All patients were treated in the operating room at Richland Memorial Hospital and were given either general anesthesia or topical pharyngeal anesthesia and IV sedation. Six patients were treated with one application of the YAG LASER while five patients had from two to five separate sessions for achiev-



FIGURE 1. Savary dilater with guide wire for use in dilatation of tight strictures in conjunction with YAG LASER therapy.

ing appropriate intra-luminal size. (Figures 2 and 3) The patients were observed overnight and generally were discharged the following day to take a soft diet until a regular diet could be achieved. There were no episodes of bleeding or perforation in this group of patients. Follow-up has continued on all patients and has revealed that four patients have died from their advanced carcinoma of the esophagus with death occurring from eight weeks to four months following therapy. Seven patients remain alive at the time of this report with three of the seven patients having undergone repeat Nd:YAG LASER vaporization of their esophageal tumors to achieve further palliation. No patient has required gastrostomy or other operative intubation for palliation.

Four patients have been treated with obstructing rectal tumors. As noted in the esophageal cancer population, these patients presented with extensive loco-regional disease or metastatic disease on presentation. Although these patients were not totally obstructed, they presented with significant paradoxical diarrhea and intermittent abdominal pain secondary to tumor. Two patients underwent diverting colostomy, but continued to have bleeding from their rectal tumors. These two patients were the first in the series to be treated with endoscopic Nd:YAG LASER therapy specifically for control of superficial bleeding from the rectal tumor. These patients achieved good palliation with no further evidence of significant bleeding or transfusion requirement. Both patients died from their tumor at two and three months post initiation of therapy. The two remaining patients

ENDOSCOPIC LASER THERAPY

TABLE 1

Patient Data Reflecting USC Twelve-Month Experience
with Nd:Yag Laser for Obstructing GI Neoplasms

<i>Patient</i>	<i>Tumor Site</i>	<i>Reason for Laser Therapy</i>	<i>Number of Treatments</i>	<i>Outcome</i>
1	Mid-Esophagus	Advanced Mediastinal Tumor	2	Died, 8 Weeks
2	Distal Esophagus	Refused Surgery	4	Alive, 5 Months
3	Rectum	Advanced Hepatic Metastases, Tumor Bleeding After Colostomy	1	Died, 8 Weeks
4	Cervical Esophagus	Advanced Regional Spread	1	Died, 10 Weeks
5	Distal Esophagus	Advanced Pulmonary Disease	1	Alive, 3 Months
6	Rectum	Advanced Pelvic Tumor, Tumor Bleeding After Colostomy	1	Died, 3 Months
7	Mid-Esophagus	Advanced Coronary Artery Disease	1	Alive, 4 Months
8	Gastro-Esophageal Junction	Advanced Local Tumor	1	Died, 14 Weeks
9	Rectum	Refused Surgery	2	Alive, 3 Months
10	Distal Esophagus	Advanced COPD	2	Alive, 6 Months
11	Rectum	Advanced Pelvic Tumor, Refused Colostomy	2	Alive, 4 Months
12	Mid-Esophagus	Associated Advanced Laryngeal Tumor	3	Alive, 3 Months
13	Distal Esophagus	Advanced Coronary Artery Disease	1	Alive, 3 Months
14	Cervical Esophagus	Recent Stroke	1	Alive, 2 Months
15	Distal Esophagus	Advanced Hepatic & Nodal Metastases	2	Died, 16 Weeks

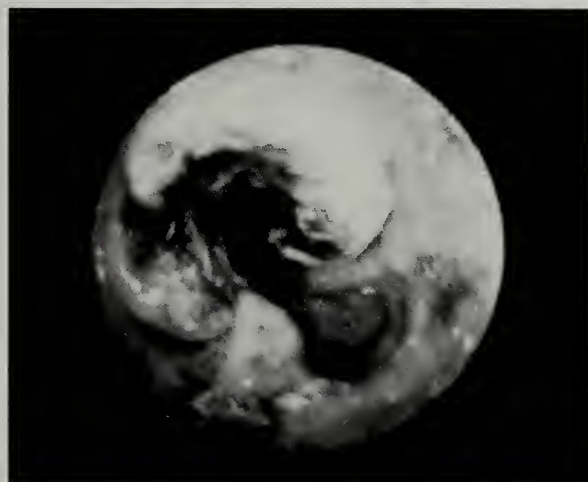


FIGURE 2. High grade obstruction of mid-esophagus (patient 7) prior to YAG LASER therapy.



FIGURE 3. Results of YAG LASER therapy on obstructing mid-esophageal tumor (patient 7).

with obstructing rectal tumors had refused colostomy and were subsequently treated with tumor vaporization using the YAG LASER. Both patients continue to have the ability to pass both stool and flatus and have not required colostomy during the follow-up period of three months and six months. Both patients have returned for subsequent LASER ablation and have had no problems with bleeding secondary to LASER therapy.

DISCUSSION

Although the technique of LASER therapy for obstructing gastrointestinal tumors is relatively new, significant experience has been gained at several centers. Fleischer and Sivak⁶ have reported on an experience with 60 patients treated for esophageal carcinoma by endoscopic Nd:YAG LASER therapy. We have followed similar guidelines in selection of patients as advocated by these

authors and feel that LASER modalities should only be used in patients who otherwise are not candidates for either curative or palliative resection. As in our patients, clinical benefit generally lasted from three to six months in those patients reported by Fleischer and Sivak. Reported complications of endoscopic Nd:YAG LASER therapy for obstructing gastrointestinal tumors are relatively few considering the extensive nature of these tumors.⁷ In our series there was no episode of sepsis or major bleeding. Although esophageal perforation and tracheoesophageal fistula have been reported, we found no perforations in our patient population. We have had no opportunity to treat patients with obstructing gastric tumors using LASER therapy. There have been descriptions in the literature of patients with recurrent adenocarcinoma of the cardia of the stomach treated with Nd:YAG LASER therapy. This was especially useful in patients who had undergone previous esophagogastrrectomy for proximal gastric tumors and later had recurrent disease causing obstruction.⁸ Japanese investigators have also described the treatment of gastric cancers using LASER modalities and have recommended that early gastric cancer may even be cured using such therapy.⁸ We feel strongly that conventional resection techniques should be used in all patients who present with gastrointestinal neoplasia if they meet criteria of locally occurring disease or have no contraindications for resectional therapy based on pulmonary or cardiac difficulties.

There is a growing experience using LASER ablation for colorectal neoplasms. Lambert, *et al.*⁹ reported a significant experience treating 537 patients with colorectal lesions, 70 percent of which were cancer. Most of these lesions were in the rectum and sigmoid colon although some were managed quite effectively in the abdominal portion of the colon. We have had an experience treating one patient with a carcinoma of the right colon who had continued bleeding from this lesion. This patient was a Jehovah's Witness and in order to achieve optimum hemoglobin levels,

LASER therapy was used to photocoagulate the surface of the tumor followed by appropriate use of oral iron therapy. This patient subsequently underwent a right colectomy. There has also been extensive experience using Argon and Nd:YAG LASERs to photocoagulate rectal polyps in patients presenting with multiple polyposis who previously had undergone subtotal colectomy and ileorectal anastomosis. These treatments have been well tolerated although the subsequent development of cancer in the retained rectal segment continues to remain problematic.

In summary, our experience in the Department of Surgery at the USC School of Medicine has been quite positive. Patients have been carefully selected for LASER ablation of obstructing esophageal and rectal tumors. Using strict criteria, this mode of therapy can be quite effective and can help to achieve amelioration in the quality of life in those patients who otherwise are destined to experience their demise from extensive tumor burden. □

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TRANSIENT PARESIS IN ATHLETES

EUGENE E. BERG, M.D.*

Neck injuries are common in contact sports. Physicians who care for athletes involved in contact sports are well aware of an injury-symptom complex known as a "stinger" or "burner." A stinger is the result of a traction injury to the brachial plexus, from forced lateral deviation of the neck, producing painful paresthesias and/or weakness localized to an isolated upper extremity in a radicular or plexus distribution.

A "stinger" must be differentiated from an entity which, as illustrated in the following case, is described as transient paresis, which implies an injury to the spinal cord. Transient paresis may be referred to as a "concussion of the spinal cord," "spinal shock," or "spinal cord neuropraxia."^{1, 2} It is the result of neck trauma sufficient to produce a temporary motor and sensory disturbance in a myelopathic distribution (hemi, para or quadriplegia). A history of transient paresis in a young athlete should prompt the physician to exhaustively evaluate the cervical spine to rule out fracture, segmental instability, cervical disc herniation or a congenital cervical anomaly before a safe decision can be made about the athlete's return to contact sports.

Case: A 16+4-year-old male High School football player attempted to duck a tackle and was struck on the top of his head by an opposing player. Following contact the patient's "face went numb," he experienced blurred vision and was unable to move or feel his arms and legs. His head and neck were appropriately sandbagged and taped to a spine board by paramedics. During the twenty minutes in transport, he regained full motor and sensory function in all four extremities. Emergency room examination revealed minimal neck tenderness, good range of motion and no objective neurologic deficits. Initial x-rays (AP, odontoid and lateral) were normal and showed no evidence of fracture, dislocation, or abnormal soft tissue swelling. The patient was discharged from

the emergency room without any activity restrictions. It was the impression of the examining physician that the patient experienced a hysterical reaction to his sport in which many of the opposing players were much larger than himself.

The patient presented the following day to a "morning after" clinic held for high school athletes by the Department of Orthopaedic Surgery, USC School of Medicine, with vague neck and right shoulder discomfort. On physical examination he had no evidence of paravertebral tenderness or paraspinous muscle spasm. His neck displayed a normal range of motion without discomfort (chin to chest forward flexion, 45° extension, 25° right and left lateral bend, right and left lateral rotation were possible to where the chin was parallel to the line of the shoulder). Bulbar and long tract signs were absent, deep tendon reflexes were symmetric, motor strength was normal (grade five) in all upper and lower extremity muscle groups. He had normal light touch, pin prick and vibratory sensation in all four extremities.

Flexion/extension lateral cervical spine x-rays, oblique and pillar x-ray views disclosed no evidence of occult fracture or instability. However, lateral cervical spine x-rays revealed the patient to have congenital narrowing of his bony spinal canal. This was detected by noting the narrowed interval between the lateral masses and the sublaminae spinous process line (double arrows, Fig. 1). Spinal canal measurements on plain films revealed the sagittal anteroposterior spinal canal diameter to be 10mm at the C3-C7 levels (single arrow, Fig. 2). This was corroborated by dorsoventral spinal canal measurements obtained on CT scan cuts through the C3, C5 and C7 vertebrae with a calibrated cursor (Fig. 3).

It was our recommendation that this child should desist from contact sports, since his stenotic bony spinal canal predisposed him to traumatic myelopathy. The patient's parents protested that their child was a talented athlete bound for a college scholarship and that they were dissatisfied with this diagnosis. The child's coach and athletic

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FIGURE 1. Normal cervical spine. The spinal canal (Heavy Arrows) sagittal diameter measures 17mm at C4 (14-20mm is the norm). Note the interval between the posterior lateral masses and the sublaminar spinous process line (double arrows).

director were then contacted and were presented with the findings and thoughts concerning this case.

DISCUSSION

Traumatic myelopathy without fracture or dislocation has been reported in patients with cervical stenosis.³⁻⁶ Spinal stenosis is seen in two different patient groups.³⁻⁹ The more common variety seen in older patients is due to degenerative hypertrophic spondylitic changes of the cervical space which encroach upon the spinal canal. The other variety more common in younger patients is secondary to congenital narrowness of the bony spinal canal. Epstein reported 23 cases of traumatic myelopathy without fracture. Seven demonstrated absolute narrowing of the bony cervical canal without evidence of degenerative cervical arthropathy.^{3, 4} These patients were younger in age and displayed the greatest neurologic deficits. Moiel described one case in which a central



FIGURE 2. Lateral cervical spine x-ray of the football player who experienced transient paresis and has congenital cervical spinal stenosis. The sagittal spinal canal diameter measures 10mm at C4 and C5 (single arrows). The space between the posterior lateral masses and the sublaminar spinous process line (double arrows) is narrow and almost nonexistent. This interval is a gross indicator of stenotic canal diameter.



FIGURE 3. CT scan of C5. The calibrated cursor measurement of 10mm anterior-posterior canal diameter corroborates the stenotic findings of the plain film lateral.

cord syndrome was sustained by an 18-year-old with congenital cervical stenosis after a hyperextension injury. In this case, lateral cervical spine x-rays were obtained of the patient's twin sister and mother which demonstrated the condition to be familial although both family members were asymptomatic.⁶

Many authors have studied the average diameter of the cervical spinal canal. Arnold, reporting the unpublished work of Padget, stated that the average C5 anterior posterior sagittal diameter was 14mm with values ranging from 10 to 18mm.⁷ Wolfe noted the average diameter of the midcervical canal to be 17mm, with a range of 12 to 20mm.¹⁰ Payne and Spillane found the mean canal diameter between C4 and C7 was 17.5mm in males, 17.0mm in females.¹¹ Hinck evaluated radiographs of children; sagittal spinal canal measurements at C3 through C5 averaged 14.8mm. The canal diameter increased with growth, approximately 3.3mm.¹² Clearly the diameter of the bony spinal canal displays normal biologic variation. Verbiest, referring to the lumbar spine, developed the concept of "absolute stenosis" in which the anteroposterior sagittal canal diameter was 10mm or less, "relative stenosis" described a canal of greater depth, but less than normal (10-13mm). Verbiest believed that small intrusions into the canal which would not produce symptoms in spinal canals of normal size might become clinically evident in small spinal canals displaying absolute stenosis.⁸ In the cervical spine, Epstein clinically corroborated Verbiest's figure of 10mm, being indicative of absolute cervical spinal canal narrowing.³ Measurements of 10mm to 13mm were considered to be indicative of relative stenosis with the anteroposterior sagittal diameter of the canal being measured from the most prominent portion of the posterior vertebral body to a line representing the laminal spinous process intersection.

Elliot reported that the cervical enlargement of the spinal cord occupied an average of 8mm, meninges and other soft tissues occupied an additional 3mm.¹³ If one accepts that the average sagittal diameter of the bony canal measures 14mm,^{7, 12} this leaves a reserve space of 3mm. In extension, ligamentum flavum thickens and infolds; the bulging annulus fibrosis further decreases the size of the spinal canal. A stenotic canal has a narrower margin of spatial safety and makes the cord susceptible to minimal trauma especially

in extension.

The diagnosis of congenital cervical stenosis can be made by screening the lateral x-ray which, as noted by Ohwada, will reveal the neural arches to be hidden behind the articular lateral processes (compare Fig. 1 & Fig. 2, double arrows).⁵ This is seen in our patient as a decreased lateral mass-spinous process interval. This interval will be decreased regardless of the amount of x-ray magnification. If this interval is narrowed on lateral cervical spine radiographs, direct measurements of the spinal canal diameter can be made on CT scan with a calibrated cursor (Fig. 3).

The significance of transient paresis has only recently been recognized.^{1, 2} It has been associated with cervical fractures, instability and congenital anomalies, chiefly segmental cervical spine fusion.² Interestingly, cervical disc herniation has been documented in several patients with transient paresis. The ruptured disc in all cases occurred above the typical C5/6, C6/7 levels.^{1, 2} To date there have been no reported cases of permanent neurologic injury that had been preceded by an episode of transient paresis.²

Quadriplegia and paraplegia resulting from cervical spine trauma are the most devastating and tragic consequences of neck injuries in contact sports. A history of transient paresis implies a temporary injury to the spinal cord, a concussive myelopathy, and deserves a thorough evaluation to rule out fracture, cervical instability, cervical disc herniation or congenital spinal anomalies such as cervical spinal fusions or stenosis.

Because symptoms are transient, the examining physician may find no physical signs to corroborate the history. The history must be given credence and not dismissed as hysteria. Only after thorough radiographic evaluation can a rational decision be made concerning a return to sports.

In this case the patient displayed absolute congenital cervical spinal stenosis (canal diameter of 10mm or less) which rendered his cord uniquely vulnerable to injury especially in hyperextension. It is our opinion that athletes with absolute cervical stenosis of this magnitude should be counseled against competing in contact sports.

SUMMARY

A distinct clinical symptom complex dubbed transient paresis is described. It implies sufficient spine trauma to cause a concussive transient my-

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elopathy. A case of transient paresis is presented which was due to congenital cervical spinal stenosis. □

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LOCAL INFILTRATION VERSUS REGIONAL ANESTHESIA OF THE FACE: CASE REPORT AND REVIEW

CHARLES R. KAYS, D.M.D.*

Little has been published comparing regional anesthesia with local anesthesia of the face in treatment of facial trauma/lacerations. Reasons for this are primarily two-fold. First, it is exceedingly direct to locally infiltrate a laceration with the anesthetic solution of the surgeon's choice. Secondly, to deliver adequate and significant regional anesthesia to facilitate preferred primary closure, a fundamental knowledge of the distribution and exit from the skull of the fifth cranial nerve is required and, therefore, some increased technical ability is needed. This paper will examine the advantages and disadvantages of regional anesthesia as compared to the local infiltration of wounds, include a case report, and some elemental information regarding technique for regional anesthesia.

Historically, the surgeon is called on to treat facial lacerations on an emergency basis. Under those circumstances, time is often at a premium and it is desirous to close expeditiously. That scenario usually involves the injection of 1% or 2% Lidocaine often with vasoconstrictor directly into the wound and adjoining soft tissue. The aforementioned technique usually renders adequate anesthesia immediately and allows the surgeon to close the wound with the suture of choice.

In facial plastic surgery, there are two primary goals—first, to treat a patient without significant pain or discomfort and, secondly, which is almost as important, to deliver an optimum primary plastic closure as determined by the surgeon's ability. When the surgeon employs the technique of injecting anesthesia into the wound, either for the sake of expediency or because of a lack of a working knowledge of sensory innervation of the face, an unnecessary compromise in plastic surgery is made. The concomitant distortion of soft tissue from 1 cc to 1.5 cc of anesthetic places the

surgeon at a disadvantage. The surgeon approximates the distended tissue margins as close as possible to that prior to injury but the result is often less than optimal. The final result is not only a function of the surgeon's ability but the trauma from the injection and the rate at which the anesthetic is resorbed from the wound site. It has also been reported that Epinephrine, the vasoconstrictor universally used, in poorly vascularized areas and in areas of disrupted tissue, is resorbed at a rate slower than in normal nontraumatized tissue.

The increased length of time of vasoconstriction can lead to tissue necrosis and possible wound dehiscence setting the surgeon up for a no-win scenario. This is a risk the surgeon does not have to take if a small increase in time and technique is employed, i.e., regional anesthesia.

In regional anesthesia of the face, anesthesia significant to facilitate primary closure can be obtained, usually by injecting 2% Xylocaine a distance from the wound at the site of exit from the skull blocking the nerve supplying sensory innervation to that region of the face. This allows the surgeon to approximate the tissue without any inherent disadvantages in technique. The depth of anesthesia in most instances is adequate to close the patient without significant discomfort. The possible negative effect of prolonged vasoconstriction of Epinephrine in traumatized and poorly vascularized tissue is a nonissue in regional anesthesia.

There are some disadvantages to regional anesthesia, however. A minor disadvantage is that regional anesthesia requires a working knowledge of the distribution of the trigeminal nerve and its points of exit from the skull. Therefore, a potential for improper technique exists. This, however, with some experience can be overcome. Another minor disadvantage is contralateral sensory innervation in wounds close to the midline of the face. In midline lip lacerations commonly seen, a bilateral regional block may have to be employed to

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obtain adequate depth of anesthesia. The major disadvantage to regional anesthesia is inadequate hemostasis. All surgeons know the propensity of facial lacerations to bleed, often profusely. The ideal wound closure in an area that is actively bleeding is at best extremely difficult. A surgeon must expect in all facial lacerations for hemostasis to be an issue. Even if a patient presents with a facial wound that appears clotted, once the wound is irrigated and cleansed prior to closure bleeding often ensues. In local anesthesia/infiltration the Epinephrine in the anesthetic provides the level of hemostasis required to facilitate closure. What is recommended is regional anesthesia followed by injection of minimal local vasoconstrictor into the wound to achieve hemostasis. This results in minimal distortion of the wound margins, adequate hemostasis and profound anesthesia, resulting in optimal plastic closure.

CASE REPORT

A 67-year-old white male presented Thanksgiving evening with a 1.5 centimeter laceration of the lower lip through the vermilion border extending down the left anterior chin .75 cms. The patient was in the process of splitting firewood when a cast metal maul struck his face. He also suffered fracture of tooth #12 with exposure of pulpal tissue. Teeth #8, #10, #24, #25 were also fractured. Tooth #12 was treated with a pulpectomy and placement of a temporary filling under local anesthesia of 2% Xylocaine with 1:100,000 Epinephrine. Definitive root canal therapy with crown placement was later performed. Teeth #8, #10, #24 and #25 were repaired with acid etch composite materials. No pulpal tissue was exposed.

In the process of treating the lower anterior teeth a bilateral inferior alveolar block was given. It is known that the inferior alveolar nerve, a branch of the trigeminal nerve, provides the sensory innervation to the lower teeth as well as to the lower lip as the mental nerve. This bilateral block had the effect of anesthetizing the entire lower lip and chin from the corner of the mouth to the inferior border of the chin. There was some slight hemorrhage upon the irrigation of the wound so it was necessary to achieve hemostasis. Approximately .25 cc of 2% Xylocaine with 1:50,000 Epinephrine was injected carefully along the borders of the laceration and hemostasis was achieved. A series of 5-0 silk interrupted sutures

were placed approximating the tissue with extra care to reproduce the vermilion border. Bacitracin ointment was placed over the sutures and the patient was instructed to return in 7 days for suture removal.

At suture removal the area appeared to be healing well without infection, induration, or discharge. At subsequent follow-up appointments the area continued to improve to the point that at a year no scar is visible to the unaided eye. The salient point of this case was that since dental work was required in addition to the suturing of the facial lacerations, it was possible to anesthetize the traumatized soft tissue by regional bilateral inferior alveolar blocks. This resulted in no wound margin distension from the injection of local anesthesia except for the slight amount necessary for hemostasis. This resulted in an optimum plastic closure.

In retrospect, in a similar situation without accompanying tooth trauma, similar anesthesia could be obtained by bilateral mental nerve blocks. Mental nerve blocks also have a higher success rate than inferior alveolar blocks.

DISCUSSION

A detailed description and review of regional anesthesia of the head and neck can be found in *Clinics In Plastic Surgery*, January 1985, by Dr. Brent Stromberg. To summarize the article, regional anesthesia of the entire anterior face can be achieved by the blocking of essentially four sites.

The anterior forehead can be anesthetized by blocking of the supra orbital and supratrochlear nerves. The supra orbital foramen is palpable on most patients if the surgeon palpates approximately 2.5 cm from the midline along the supra orbital ridge. The supratrochlear nerve lies just medial to the supraorbital foramen. Inferior to the supraorbital foramen in essentially a straight line lies the infraorbital foramen. Exiting from the infraorbital foramen is the infraorbital nerve which supplies the sensory innervation to the lateral nose, lower eyelid, and cheek. This foramen is often difficult to palpate. To successfully block this nerve, two approaches are possible. First, a needle may be inserted 2.5 cm lateral to the midline and 1 cm inferior to the inferior border of the orbit in line with the supraorbital foramen. Another technique available is an intraoral injection. A needle may be inserted just distal to the canine eminence and advanced until contact with

bone occurs which is just inferior to the foramen. The difficulty with this technique is that often the canine's position is anterior to the ideal position increasing the chance of error for improper needle placement.

The anterior lower lip can be blocked through anesthesia of the mental nerve. This supplies sensory innervation of the lower lip from the corner of the mouth to the midline and lower border of the chin. This foramen is uniformly located between the first and second bicuspid and an intra-oral approach is the approach of choice. The rest of the face and cheek can be anesthetized by a block of the mandibular nerve, the third major branch of the trigeminal nerve. This is a difficult block and Stromberg reports a failure rate of successful anesthesia in competent hands of 15 to 20 percent. This nerve is approached in the infratemporal fossa posterior to the pterygoid muscles and posterior to the pterygoid plate. The needle is directed to that area intraorally from across the arch. If successful, anesthesia is produced to the lower teeth, general anesthesia of the anterior two-thirds of the tongue, pharynx, cheek, and also the mental nerve. This can be a very useful block.

SUMMARY

Regional anesthesia requires knowledge of the distribution of the terminal branches of the trigeminal nerve, successful technique, and slightly more time to induce anesthesia. It should always be the first consideration upon presentation of a facial laceration. It will provide the surgeon with the ability to close the wound and approximate the tissues as close as possible to that prior to injury without distortion of tissue inherent with local infiltration. Hemostasis continues to be an issue. Epinephrine may be required prior to closure but the amount injected will be less with a successful regional block. An area of future study may be the development of effective topical clotting agents that will preclude the need to inject any Epinephrine into the wound. □

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QUALITY ASSESSMENT: A CURRENT PERSPECTIVE

FREDERIC G. JONES, M.D.*

A recent editorial in the *American Medical News* addressed the responsibility of the medical profession in assuring the quality of medical care.¹ The editorial outlined a number of activities being undertaken by the AMA and its constituent organizations. For many of them, participation at the local level is essential.

For individual physicians, the challenge is to expand participation in peer review. No matter how good any individual physician may be, and no matter how high the quality of care he or she provides, that physician is not fulfilling his or her total commitment to the profession unless he is actively working to assure that every other patient in the community also has a physician providing the best possible care.

In 1981, the AMA adopted nine principles for voluntary medical peer review. In 1986, additional guidelines were adopted. At the 1987 Annual Meeting, the Council's Report A described the operation of five specific quality assessment systems. The Council prepared guidelines for the conduct of medical quality assurance activities directed toward practitioners' competence. These were recently published and merit the reader's attention.

At the 1986 Annual Meeting, the House of Delegates adopted Council on Medical Services Report A on "quality of care." That report identified eight essential elements that characterize care of high quality and presented a series of nine "Guidelines" for the conduct of quality assessment, the process by which the quality of medical care is monitored and measured.²⁻⁷

The AMA Department of health care review in October 1987, published *Measuring Quality of Care: A Resource Guide*. The introduction to that guide is worthy of our attention. It points out that quality assurance is not a new concept and that physician peer review has been an ongoing activity for many years. What is new is the develop-

ment of data driven efforts and new methodological tools to support the QA and peer review process. These efforts will seek to assess quality of patient care through the use of objective clinical benchmarks with which to measure outcomes after adjusting for severity of illness of the admitted patient. The results of this process can then be used in the peer review process in an effort to determine (1) whether poor quality care was delivered, or (2) whether, given the severity of the illness, the admission of the patient to hospitalization was appropriate.

The JCAHCO has introduced an AGENDA FOR CHANGE for developing and testing certain clinical indicators in cooperation with many of the specialty societies. These indicators may prove very useful in an effort to move toward a consensus for the appropriateness of care delivered.

A recent article in the JAMA proposed two systems for monitoring quality of care in the Medicare Program. A purpose of this paper is to acquaint the reader with the process for quality review by the current SC PRO, as well as review present and future quality review strategies and methods.⁷

Another participant in the quality assurance activities has been the PEER REVIEW ORGANIZATIONS (PRO). At present, PRO's generic quality screens do not pose adverse economic consequences for hospitals and physicians. However, the COBRA ACT of 1986 gave the PROs the authority to deny payment when they identify substandard care provided to Medicare patients. Each PRO has developed guidelines on sanctions to incorporate new HCFA regulations. Perhaps the least understood component of the PRO Program, the penalty recommendations may include a wide range of remedial measures.^{8, 9, 10}

The past year has seen a dramatic increase in interest and activities concerned with the quality of medical care. After moving through a period of emphasis on cost-containment, and a resultant concern that quality of care might diminish in the cost-quality dilemma, the current interest today

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seems to focus on value, the result of the most cost-effective care.

It seems reasonable to explore how the quality of care received by Medicare beneficiaries might be monitored so that efforts to contain expenditures do not eliminate effective, as well as ineffective, medical care.

The SC PRO uses criteria to judge care that are both explicit (present), and implicit (subjective). Explicit review of the process of care, which is typically applied to the clinical record, is only as good as the thought put into constructing the criteria. The criteria in current use by the SC PRO evolved from clinically acceptable sources such as INTERQUAL, specialty societies, and with modifying input from committees of practicing S. C. physicians.

Implicit assessment of the process of care, which is based on expert ("peer") physician review of a written clinical record, is the usual method of assessment of quality by the SC PRO. This method is acknowledged as being especially valuable in assessing short-term hospital care for patients with complicated conditions for which developing explicit criteria may be difficult.

Brook and Lohr point out that using this approach calls for special attention to three points: (1) assisting physician-reviewers to locate critical information by investing sufficient resources to ensure that medical records are complete, legible, and in good order; (2) choosing records for review with a relevant sample frame in mind; and (3) selecting physician-reviewers carefully, after appropriate screening and testing. Picking skilled physician-reviewers may be the central and critical step.⁷

Dr. Avedis Donabedian, acknowledged by most to be the major authority in quality evaluation, pointed out the need for systems and specialists in clinical quality outcome. In a recent address to the ACURP, he pointed out that clinical performance is to be assessed in the terms of the cost of care and the clinical product of care. The ultimate product of care is a change in health status. The production process is generally thought to begin with a perception of need. The patient then seeks, and sometimes achieves, access to the provider of health care. Physicians have been likened to design engineers who use the order sheet to design a management plan for each individual patient. An assessment of the success of this encounter between the patient and physician can be judged on

two bases: (1) efficiency, and the avoidance of waste, and (2) the clinical effectiveness. They both require the clinical strategies and skills and judgment of the health professional. Donabedian believes there is a need for a clinical performance specialist to analyze the patterns of care and the physician's clinical decision process.¹¹⁻¹⁴

Included in the AMA's eight "ESSENTIAL ELEMENTS OF QUALITY" is the final element which states that care of high quality should: be sufficiently documented in the patient's medical record to enable continuity of care and peer evaluation. In my experience, many of the cases flagged by the SC PRO Nurse Reviewers for consultant evaluation lacked adequate notation in the chart of the rationale and details of care provided. In many instances, the initial communication to the attending physician was a request for verification of the clinical decision not clearly substantiated by a careful analysis of the clinical record. A prompt response by the attending physician providing the requested information usually permitted the second SC PRO CONSULTANT to approve the case. Admittedly, there were occasions that the information was already available in the medical record but overlooked by those involved in the initial review. Not unexpectedly, this resulted in further frustration by the physician and loss of confidence in the review process.

The solution seems to indicate a need for greater attention to timely, accurate medical records of sufficient quality to meet the AMA guideline. On the PRO side, careful initial analysis performance by qualified and clinically able physicians would result in an improved ratio of reversed initial denials.

The process has now been established for quality review to occur. It appears to the author that the process needs to be filled out by having the best possible physician reviewers involved in the operation. William Jesse, M.D., spoke to this issue last October at the annual meeting of the AMERICAN COLLEGE OF UTILIZATION REVIEW PHYSICIANS. In accepting the founders award, Dr. Jesse stated that, "When motivating physicians toward involvement in quality assurance, you can lead the horse to the water, but how will you make him drink?"¹⁵

Dr. Jesse, currently Vice President for Education of the JOINT COMMISSION, feels that one of the major functions of those involved in the review process is to motivate our colleagues to

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share at least part of that interest with us. We would, in turn, try to persuade those facilities with which we are affiliated to have an organizational commitment to quality. The result would be a universal desire to provide high quality patient care. First, we have to understand what are some of the barriers to their participation, and in doing so, design a strategy for removing those obstacles. Perhaps a definition of what is quality health care would make the task easier. We could then turn to the definition offered by the AMA, Hospital Association, and a variety of our other professional organizations. A key requirement is that of continued improvement toward excellence.

One can operationally define quality in health care as having four discrete components: first, optimal professional performance by all who give care, achieving the best clinical outcomes that we can, given the current state of medical knowledge and the available resources. The second is efficiency. It seems that an increasing amount of care will be provided in managed care systems and the cost of poor quality will become increasingly important. It appears that by optimizing the quality of care over time, we hope to achieve the most value in health care systems. One major component of quality care is the appropriateness of the delivery process. The third critical component of quality is minimizing the risk associated with the provision of care. A number of studies have indicated that hospitals can be hazardous to our health. A number of studies indicate that a percentage of hospitalized patients suffer an untoward effect that prolongs their stay in the hospital. Finally, the most often overlooked component is assuring that the patients are satisfied with the care that they are receiving.

The topic of quality is on the agenda of every professional group in 1988. The concern earlier was with cost and is becoming increasingly so with quality, and soon the buzz word will be value, the best quality at the most reasonable cost. This concern comes from patients, business, and government alike. In the absence of convenient and reliable indicators of quality care, the purchasers of this product will turn to easily determined indicators. The most obvious example is the HCFA hospital-specific mortality data. Death is one of the few outcomes of health care about which there is little argument whether or not it has occurred! Most would also agree that mortality is a poor indicator of the quality of care

delivered. But, the data are available, and therefore, the data will be used, and so, we have just completed round two of the hospital-specific death rates for Medicare patients. It is likely that this will continue as an event to herald the holiday season as surely as the Macy Parade. It is likely, however, that modifiers, such as severity-of-illness, will be required. It is helpful to recall that in the rush to use outcome as the ultimate measure of quality, we should not forget the contributions of structure and process to the equation. It behooves all of us to understand the type of care provided by us, as individuals, and as institutions.

The malpractice problem presents additional continuing pressure and a divergence of perception as to the cause of the "problem." On one hand, the physician views unreasonable expectations by the patient and their families as the etiology; the patient regards errors in the diagnosis and treatment by physicians and hospitals to be the root cause. This dichotomy needs further examination. In the words of Pogo, if we think the consumers have unreasonable expectations of health care, then, "We have met the enemy and it is us." If the expectations by patients are excessive, we have only to turn to the advertising by health care institutions or physicians concerning the provision of "the highest possible care." Dr. Jesse warns us all to be cautious about promoting our quality until we know that it is!

In this climate of cost versus quality, the question of liability for a utilization review decision is currently being addressed in the courts. The case of *WICKLINE V. STATE OF CALIFORNIA*, 239 Cal. Rptr. 810 (Cal. Ct. App. 1986) (appeal to California Supreme Court dismissed), is very important. The facts are long and complicated and should be read in their entirety, as they set the stage of the court's reasoning. The language of the court deals particularly well with the difference between prospective and retrospective review. The court shows a clear understanding that retrospective review is about money primarily, and that prospective review, while it is about money, is more importantly about providing care.

"A mistaken conclusion about medical necessity following retrospective review will result in the wrongful withholding of payment."

"An erroneous decision in a prospective review process, on the other hand, in practical consequences, results in the withholding of necessary care, potentially leading to a patient's permanent

disability or death."¹⁶

The court found in this case that the physician could have done more to force a realistic choice by the California Medical Program. The physician did not. Thus, the state of California was not responsible, but could have been. The legal reasoning is clear. For the first time, hospitals and physicians have some useful guidance to force the payor to be responsible for its actions.¹⁷

Our task as managers and physicians is to improve where we can improve, never being satisfied. Quality assurance is constantly striving toward excellence. Perhaps the greatest challenge is to create an attitude in ourselves or in the organization to which we belong. What then keeps physicians from adopting easily the rationality of peer review and quality assessment and appropriateness review? First, the processes involve a way of reason that we were not taught in medical school, nor exposed to in our residency. Only a brief introduction to epidemiology allowed us to reflect on what might happen to groups of people as well as to the individual patient in question. Otherwise, we focus on our encounter with a single patient. Secondly, we need to address the very real problem of, "I don't have time to get involved in the process." A common, and very valid objection since this review time would generally be at the expense of practice or family time. In the voluntary staff form of hospital, reduced income or lifestyle dissatisfaction, are the result of any significant commitment. Is it a surprise that few organizations have significant participation in this endeavor? Therefore, it is imperative that those of us who are charged with implementing this process make certain that the time asked of the medical staff is well spent. Wasting time in committees is a major cause of

disaffection with peer review. A carefully designed screening process based on clinically valid criteria will select charts which can then be submitted to peer review by clinically competent, and technically skilled physician-reviewers. Most cases should be assessed by walking in "the shoes" of the attending, acknowledging what information was available at the time of performance. Moreover, review by a single peer should never be allowed to constitute a final determination of substandard care. It is essential that communication be established that would permit the provision of additional clinical data, or explanation of the rationale involved in case-management.

How then can more participation be stimulated? It is suggested that those in leadership roles, either voluntary or as a career choice, must have a role of educating, facilitating, and stimulating our colleagues to greater involvement in these activities. These leaders cannot do quality assurance! We can promote, perhaps even manage the process, but all of us have to work together to create a commitment to this activity if we are to be successful.

SUMMARY

It is suggested that quality assurance is not a luxury that we may or may not choose to acquire. It is a necessity that embodies our commitment and obligations as a society, in general, and as health care professionals, in particular. It is important, therefore, to understand what quality assurance entails and how to perform quality assessment. This article summarizes recent and important contributions to the literature in attempting to give a current perspective on what constitutes high quality health care. □

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Editorial

“I’VE BEEN THERE”

“The problem with editing *The Journal*,” Dr. Joseph Waring once confided to me, “is having to meet that deadline.” This issue’s deadline found me without an editorial. After some hasty consulting, I decided to write about the definition of “hazardous waste.” Knowing that the debate would probably be resolved before this issue reaches print, I assembled the materials anyway, sat down at my desk, and waited for inspiration. It never came. My thoughts were elsewhere—in a far-away courtroom.

It had been my misfortune the previous week to participate in a grievous lawsuit against an exceptionally fine physician. I had seen the physician subjected to the terrible capriciousness of the tort liability system. I had seen an aggressive plaintiff lawyer make unconscionable *ad hominem* attacks when reason and logic failed to support his case. It brought back all of the arguments that randomly-selected juries are ill-equipped to settle intricate matters about medical decision-making. It brought back all of the concerns that *who* gets sued and *when* usually make little or no sense. More importantly, it brought back an issue that receives little or no public attention: the damage done to the physician merely by the fact of being sued.

In recent months, I have had occasion to talk to five physicians who were being sued for the first time. They included a distinguished surgeon, two widely-respected family practitioners, a pillar-of-the-community internist, and a famous medical school professor. In all but one instance, the theory of negligence seemed to revolve around failure to predict the unpredictable. I opened as follows:

“I’m sorry. Let me tell you what I suspect is happening to you. You’re not sleeping well. What time you used to call your own is now at the beck and call of lawyers. You’ve memorized every date, every square inch of that medical record until it seems larger than life. Every patient you see now seems like a potential adversary. You’re starting to question your decision to go into medicine in the first place. You may be having troubles

with your marriage. In fact, this matter is disturbing you down to the most basic, deepest core fibers of your being.”

Each time, the response was similar: “Gee, how did you know all that?”

I responded: “I’ve been there.”

Ten years have passed. Concerned by these exchanges I hereby break my own self-imposed statute of limitations on the grounds that what I learned might be useful to other physicians. Today my main regret lies exactly where it did when the misfortune occurred: with the patient and the patient’s family. Looking back, I suppose that I was lucky to have been tested at a relatively young age and in a case in which I could defend my decisions with all of the textbooks and literature. I was in fine company (before it was over, five of us were alleged joint tortfeasors), and I had good lawyers. The matter came to trial, but was dismissed as a non-suit. But the proceedings, extending over two years, took their toll. I have concluded that the outcome of malpractice cases is of much less significance than being subjected to the ordeal in the first place.

I have yet to meet a physician who does not feel that his or her first lawsuit was less than a nightmare. The mere accusation of malpractice makes people whisper and demands an enormous redirection of time and energy. But the worst aspect is its challenge to one’s identity. The surgeon put it best: “Other people don’t realize how *seriously* we take our work.” Charging negligence in the practice of medicine is a far cry from charging failure to see a stoplight or to pick up a banana peel. Through the long hours of organic chemistry and anatomy, of internship and residency, there emerges a self-concept strongly wedded to one’s commitment and competence. That a trial lawyer with far less training and with little or no certification to do what he or she specifically *does* can deal such a severe blow to one’s sense of self seems grotesquely unfair. But the purpose of this editorial is not to whine “ain’t it awful.”

I take my text from Churchill: “In life’s stee-

plechase, one must take the hurdles as they come." My purpose is to offer ten suggestions for future hurdlers. Here they are, in no particular order of importance.

1. Be kind to thyself. Remember who you are, what you've accomplished, and how much you mean to so many people. Get out all of your old photographs and clippings and consider starting a scrapbook. Remember a corollary of the Golden Rule: you cannot love your neighbor if you do not first love yourself.

2. Take an active role in your defense, but be philosophical. Recognize that to a large extent it's just a game, a game mainly concerned with money and having little or nothing to do with you. Dissociate the theory of negligence not only from your self-concept as a physician but also from your self-worth as a person.

3. Prepare *in writing* a list of your long-term goals in the major spheres of life: personal, professional, financial, recreational. File it in a secret place, and get it out from time to time to check your bearings. Then, eliminate from your life for the time being whatever will not help you reach these goals and/or does not have a five-year history of importance to you. Say "no."

4. Pay close attention to your primary relationships: your immediate family. Go out of your way to meet their needs even when you don't feel like it. Appreciate that it is in giving that we receive.

5. Risk sharing your feelings and frustrations with a friend or two. To most of us, this is difficult. When we were young, we saw far too many John Wayne movies. As interns and residents, we heard far too many tales of the "days of the iron men." But try. Invite someone to lunch. You'll be surprised.

6. Seek solace in whatever body of literature gives you the best access to the eternal truths. For me, it's usually the wisdom literature of ancient Israel (e.g., Psalms, Proverbs, and Ecclesiastes) or the Stoic philosophers. I still keep in my wallet the first paragraph of the *Enchiridion*, by Epictetus. It begins: "Of things some are in our power, and others are not."

7. Get in touch with your position in the life cycle, since your new challenge is but one among several. Consult either Gail Sheehy (*Passages*) or Daniel Levinson (*The Seasons of a Man's Life*).

Know what's ahead, whether it be the phase of "becoming one's own man" (age 35-40), the "age 50 transition," or the "late adult transition" (age 60-65).

8. Despite your need for a measure of introspection, don't become a recluse. As Sir William Osler put it, "seek the cheerful haunts of men and mingle with the bustling crowd."

9. Be a good animal. Compensate for your insomnia by allowing more than your usual time for sleep. Exercise. Elevate those endorphin levels. Avoid habituating tendencies. Get a physical examination, and seek professional help for your emotional problems if necessary. Follow the same advice you would give a patient.

10. Forgive. Work hard at forgiving the plaintiff and the plaintiff's lawyer, however outrageous the allegations may seem. Turning the other cheek may never have seemed like harder advice, but failure to do so hurts only yourself. Recognize that a legal system which allows people to parlay a physician's office visit, procedure, or consultation into small fortunes for themselves is merely symptomatic of deeper problems in our society. And forgive yourself. Even if your care may not have met some ideal (and whose always does?), remind yourself that physicians are merely fallible human beings trying to help other fallible human beings. When this ceases to be the case, there'll be no more need for doctors.

Elsewhere in this issue, Dr. Frederick Jones points out our obligation not only to practice good medicine ourselves but also to assure quality care throughout our communities. Unfortunately, it has been difficult to achieve meaningful peer review—in medicine or in any other profession. But as medicine becomes increasingly technical and as clinical judgment continues to be subjected to algorithmic analysis, it should become much easier to set criteria regarding the "standard of care." When this happens, we should be in a better position to plead the case for qualified arbitration panels as a viable alternative to the jury system. In the meantime, we must stand as *one* profession committed to the three C's: competence, consistency, and compassion. We cannot be compassionate to our patients without first being compassionate to each other and to ourselves.

—CSB

ON THE COVER: MAJOR ANDERSON ARRIVES AT FORT SUMTER

On the night of December 26, 1860, six days after South Carolina seceded from the Union, Major Robert Anderson, Federal Commander of the Port of Charleston, fearing hostile action, removed his small garrison of troops from a vulnerable Fort Moultrie to the stronger fortress of Fort Sumter. Although hailed as a hero of the Union cause for thus securing the Charleston harbor, Major Anderson received little in the way of assistance or advice from Washington, and when the South Carolinians successfully ringed the fort preventing any supplies or reinforcements from reaching the garrison, the situation looked grim. On March 4, a dispatch to the newly inaugurated Lincoln advised him that there was not enough food in the fort to last six weeks.

While the governments of the United States and the sovereign state of South Carolina negotiated the withdrawal of Federal troops from South Carolina, the small force in Fort Sumter waited. When it became evident that Lincoln would indeed send reinforcements to Fort Sumter, General P. G. T. Beauregard sent a note to Major Anderson, demanding evacuation of the fort with the terms of surrender spelled out: "All proper facilities will be afforded for the removal of yourself and command, together with the company arms and property, and all private property, to any post in the United States which you may select. The flag which you have upheld so long and with so much fortitude, under the most trying circumstances, may be saluted by you on taking it down."

Anderson replied that it was "a demand with which I regret that my sense of honor, and of my obligation to my government, prevent my compliance." He remarked to the aides while handing them his reply, "Gentlemen, if you do not batter us to pieces, we shall be starved out in a few days."

The bombardment began shortly thereafter, at 4:30 on Friday, April 12. The issue was never in doubt. The token resistance was a point of honor. With the conditions of honor met, Major Anderson agreed to the terms offered two days earlier. After a fifty gun salute to "the scorched and shot-torn flag [it] was lowered and given to Anderson who . . . then marched his men, with flying colors and throbbing drums, to the wharf where they boarded a steamer" which would take them

home. As the Union troops passed silently out of the harbor, Confederate soldiers lining the beaches removed their caps in salute. There was no cheering.

Major Anderson, broken in health, never again fought for the flag that he had so honorably defended. What caused such a sudden and total collapse of a presumably robust career soldier? Was it the turmoil of fighting bravely in a war that his "heart was not in," lacking the full support of the government he so loyally served or the physical and mental deprivation suffered while defending his post "to the last extremity?"

In celebration of South Carolina History Day, Myron G. Sandifer, M.D., Professor Emeritus, Department of Psychiatry, College of Medicine, University of Kentucky, will address this question in a talk, "When Heroes Become Ill." This lecture is sponsored by the Waring Library Society and is open to all. It will be held at 4:30 p.m., Thursday, November 17, 1988, in Room 202, Basic Science Building, Medical University of South Carolina, Charleston, South Carolina.

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FIGURE: Major Anderson in his study.

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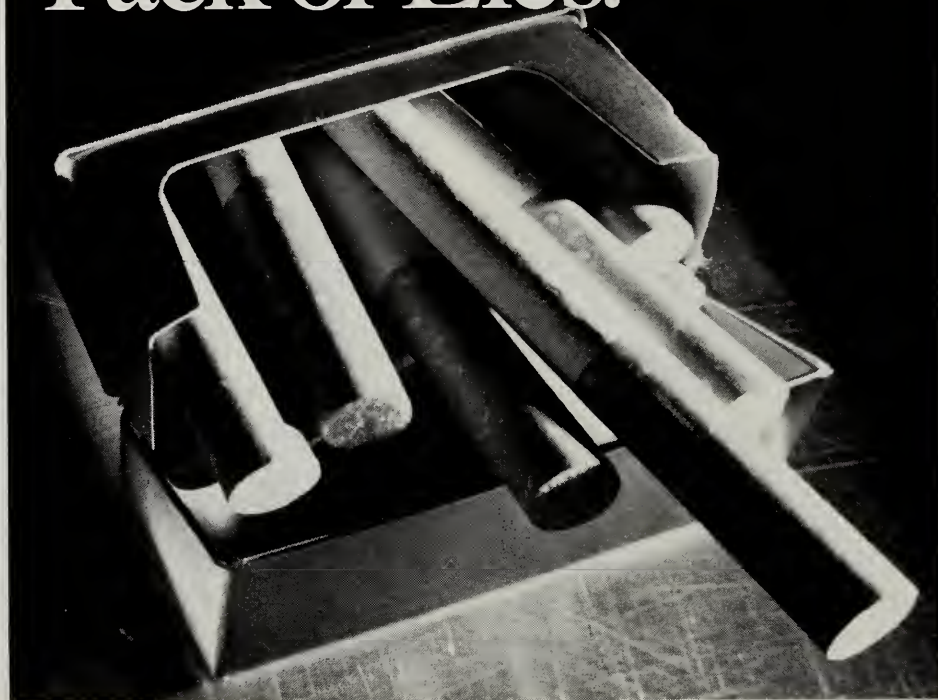
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CARDIAC TRANSPLANTATION IN SOUTH CAROLINA: THE FIRST YEAR*

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Twenty years after the first successful human cardiac transplant,¹ it has become standard therapy for certain patients with end stage heart disease. The last five years have seen the number of cardiac transplants performed in the United States increase from 172 in 1983 to 1438 in 1987.² Over 90 centers currently have cardiac transplant programs. This increase has occurred because of greatly improved short and long term survival following cardiac transplantation.

Encouraged by these results, and with the desire to provide ready access to this new therapy for South Carolinians, the Division of Cardiothoracic Surgery and the Medical University of South Carolina began organizing a cardiac transplant team in 1986. By May 1987, the team was ready to begin evaluation and treatment of candidates. On June 30, 1987, Terrance Richardson, a 12-year-old black male with idiopathic cardiomyopathy received an orthotopic cardiac transplant (Figure 1). During this first year, a total of seven cardiac transplants have been performed at the Medical University and are summarized in this report.



FIGURE 1. Terrance Richardson and family three weeks after transplant, with Dr. James B. Edwards, President of the Medical University and the cardiac transplant team.

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CASE REPORTS

Patient 1: T.R., a 12-y.o., 45 kg, type B, black male presented on June 1, 1987 with a three-week history of lethargy, loss of appetite, dyspnea and cough. Extreme left ventricular dysfunction with severe mitral and tricuspid insufficiency were found on echocardiography. Progressive heart failure and pulmonary edema required initiation of inotropic and subsequently ventilator support. Cardiac catheterization revealed pulmonary artery (PA) pressure of 50/30, a wedge pressure of 30, cardiac index of 1.49/l/min/m², and pulmonary vascular resistance index of 4 Wood units. Although he was successfully weaned from the ventilator, attempts to wean intravenous inotropic support were unsuccessful. On June 30, 1987 orthotopic cardiac transplantation was performed with a total donor ischemic time of one hour 25 minutes. The donor was an 80 kg, type O, male victim of a motor vehicle accident. Immunosuppression consisted of 6 mg/kg Cyclosporine A and 2.5 mg/kg azathioprine given orally four hours before operation, 500 mg methylprednisolone given intraoperatively, followed by 8-15 mg/kg/day cyclosporine A, 2-2.5 mg/kg/day azathioprine, and tapering prednisone starting at 1 mg/kg/day. Cyclosporine dosage was adjusted according to serum creatinine and high performance liquid phase chromatography drug level assays. Rejection surveillance consisted of serial EKGs, lymphocyte surface markers and weekly endomyocardial biopsy. He was discharged on postoperative day 22 and subsequently returned to school in the fall. Mild hypertension due to cyclosporine is controlled with furosemide. A single episode of acute rejection on March 1, 1988 was treated with I.V. methylprednisolone with complete resolution. At one year his coronary angiogram was normal. The left ventricular ejection fraction was 72 percent. He attends school full time and is actively engaged in noncontact sports.

Patient 2: C.B., a 40-y.o., type O, white male, had undergone two vessel coronary artery bypass grafting and left ventricular aneurysmectomy in 1982. Recurrent angina prompted percutaneous transluminal angioplasty in July and October, 1986, but angina returned. Angioplasty and further surgery were not feasible. Catheterization revealed a 36 percent ejection fraction, cardiac index of 2.4, and normal right heart pressures.

Cardiac transplantation was indicated because of intractable class IV angina, congestive heart failure, and malignant ventricular arrhythmias, all unresponsive to conventional medical or surgical therapy. After a three-month wait and an additional admission for control of congestive heart failure, the patient was transplanted from a 40-year-old, type O, male donor on October 20, 1987. He was discharged on the fourteenth postoperative day. His six month post transplant evaluation revealed normal coronary arteries, an ejection fraction of 63 percent and normal pressures. He is fully active and has had no significant rejection episode.

Patient 3: M.S., a 51-y.o., type A, white male mechanic, developed congestive cardiomyopathy symptoms in early 1987 following myocardial infarctions in 1979 and 1982. Late in his course he developed jaundice, hepatomegaly and ascites from chronic passive congestion. Transplant evaluation revealed a left ventricular ejection fraction of 18 percent with global hypokinesis. Coronary anatomy was not suitable for bypass grafting. Cardiac index was 1.8 and PA pressure was elevated. Cardiac transplantation from a 31-y.o. male, type A donor was performed on January 13, 1988. Early cyclosporine toxicity produced transient oliguria and azotemia requiring diuretic therapy and some transient reduction of dosage. He was discharged 16 days after surgery. An early rejection episode on February 5, 1988 was not controlled with methylprednisolone so murine monoclonal anti-thymocyte antibody (Orthoclone, OKT-3) was added for ten days. Endomyocardial biopsies initially improved, but rejection recurred on March 15, 1988. Minnesota anti-lymphoblast globulin therapy was successful in reversing this stubborn rejection. Rejection has not returned and the patient remains well.

Patient 4: D.S., a 45-y.o. type B, white female, is the sister of a renal transplant recipient. She suffered a silent anterior myocardial infarction in 1985. In 1986 she developed congestive heart failure and episodes of ventricular tachycardia. Left ventricular ejection fraction was 13 percent with severe global hypokinesia and a left ventricular aneurysm. PA pressure was 51/25 with mean of 36 and wedge pressure of 28. She underwent transplantation from a 35-y.o. male, type O donor on April 6, 1988. She experienced a single

rejection episode on the twelfth postoperative day, successfully treated with methylprednisolone. She was discharged on the 21st postoperative day and presently enjoys unlimited physical activity, walking three to five miles daily for exercise.

Patient 5: F.C., a 52-y.o. type A, white male, underwent three vessel coronary artery bypass grafting for post-infarction angina in 1972. Reoperative coronary revascularization was required in 1985. Progression of angina was successfully treated with percutaneous transluminal angioplasty in March 1987, but symptoms returned and repeat angioplasty was unsuccessful. Transplant evaluation demonstrated an ejection fraction of 19 percent. On February 19, 1988, he developed profound congestive heart failure and oliguria, refractory to inotropic agents, requiring intra-aortic balloon counterpulsation. No donor could be found at the time. Fortunately he improved and the balloon pump was weaned over a one-week period and removed. Left ventricular ejection fraction decreased to nine percent. Severe congestive heart failure continued, resulting in cachexia, with a 25-lb. weight loss. On May 26, 1988, cardiac transplantation was performed from a 52-y.o. type A male with a normal coronary angiogram. Moderate early graft dysfunction required intra-aortic balloon counterpulsation for weaning from cardiopulmonary bypass. On day three, acute rejection was found, and treated successfully with methylprednisolone. On day 18 atrial fibrillation and short runs of ventricular tachycardia heralded recurrent rejection which was again successfully treated with methylprednisolone. Mexilitine was begun for control of ventricular tachyarrhythmias. Gradual weight gain and physical therapy allowed discharge from the hospital on July 27, 1988.

Patient 6: E.W., a 62-y.o. type A, white male, developed ischemic cardiomyopathy secondary to a massive ventricular aneurysm. Severe ventricular arrhythmias required amiodarone for control. Left ventricular ejection fraction was nine percent. Over the five months he awaited transplant, he developed progressive cardiac cachexia. On June 4, 1988, orthotopic cardiac transplantation was performed from a 37-y.o., type A, male donor. Because of his age, immunosuppressive therapy was modified to reduce

initial cyclosporine dosage. Oliguria developed on the second postoperative day and despite further reductions in cyclosporine dosage, persistent oliguria required hemodialysis on day four. He remained hemodynamically stable and began eating a regular diet. On day 11 he developed respiratory distress requiring reintubation and ventilation. Bronchoscopic cultures were sterile, and infiltrates cleared somewhat with dialysis and broad spectrum antibiotic coverage. Urine output improved and dialysis was stopped. He was weaned from the ventilator and extubated on day 18, but recurrence of pulmonary infiltrates and fatigue required resumption of ventilator support and hemodialysis. Sputum specimens obtained with reintubation demonstrated cytomegalovirus pneumonitis, so DHPG (gancyclovir) therapy was begun. Persistent infiltrates and hemoptysis prompted transbronchial biopsy and bronchoalveolar lavage. The lavage fluid grew *Aspergillus fumigatus* and *Staph aureus*. Amphotericin B and vancomycin were added. Despite large doses of these agents, bilateral aspergillus pneumonia progressed and the patient died of uncontrollable sepsis and respiratory failure on July 10, 1988. An autopsy confirmed the clinical diagnosis of severe necrotizing aspergillus pneumonitis.

Patient 7: F.L., a 51-y.o., type O, white male, underwent four vessel coronary artery bypass in 1977. In January, 1988, repeat catheterization because of angina and heart failure revealed occlusion of the entire native circulation and of two of three grafts. Left ventricular ejection fraction was less than 15 percent and the PA pressure was 75/34. In October, 1987, he developed ventricular tachycardia partially controlled with amiodarone. Orthotopic cardiac transplantation was performed from a type O, male donor on June 21, 1988. Immunosuppression was as described previously. He was discharged on July 14, 1988.

RESULTS

During the first year of operation, the MUSC cardiac transplant program screened 44 candidates, of which 22 underwent at least a portion of the diagnostic evaluation. Two patients died during or shortly after evaluation. Seven patients have been transplanted with one death. Seven patients are currently awaiting transplantation. Three patients have died awaiting transplanta-

tion. Two have decided against transplantation during evaluation. After evaluation one patient has received conventional therapy (DDD pacemaker) with acceptable improvement in functional class. Five of the donors have come from MUSC, one from another South Carolina hospital, and one was a distant procurement from out of state.

DISCUSSION

Cardiac transplantation now provides hope for patients whose end-stage heart disease is not amenable to standard medical or surgical therapy. Transplantation should be reserved for those patients whose potential survival without transplant is less than 12 months. This group is best identified by left ventricular conduction delay, elevated pulmonary capillary wedge pressure, complex ventricular arrhythmias, and elevated right atrial pressure.³ Most also have a left ventricular ejection fraction of less than 20 percent.⁴ Specific selection criteria have been developed and are relatively standard throughout the world. (Table I).^{5, 6} Strict criteria are required because of the significant imbalance between potential recipients and available donors.

It is estimated that up to 15,000 suitable candidates may present for transplantation yearly but only around 2,000 potential cardiac donors are referred.⁷ These figures highlight the importance of choosing the best available candidates and indicate the reason that fully one-third of candidates die awaiting transplantation. Furthermore, it is important to identify and evaluate potential candidates early to avoid transplanting desperately ill patients with failing extracardiac organ systems. Federal statistics suggest that about 20,000 people develop brain-death while on ventilator support, implying a potentially larger donor pool.⁸ Brain death most often results from motor vehicle accidents (48.8%), cerebrovascular accidents (27.2%), gunshot wounds (8.0%), and suicide (11.9%).² Public and physician attitudes toward organ donation may also be limiting factors. A federally mandated national organ procurement network, the United Network for Organ Sharing (UNOS), coordinates donor and recipient matching. Locally, the South Carolina Organ Procurement Agency (SCOPA) functions throughout the state providing donor coordination to transplant centers. As well as supplying technical services,

TABLE I

MUSC RECIPIENT SELECTION CRITERIA

Absolute

1. End-stage (NYHA Class III-IV) congestive heart failure not amenable to conventional medical or surgical therapy.
2. Pulmonary vascular resistance less than 6 Wood units.
3. No active infection.
4. No pre-existing malignancy.
5. Normal function or reversible dysfunction of extra-cardiac organ systems: kidneys, liver, CNS.
6. No severe chronic obstructive lung or bronchitic disease.
7. No undiagnosed radiographic pulmonary lesions.
8. No symptomatic or severe asymptomatic peripheral vascular or cerebrovascular disease.
9. No unresolved pulmonary infarction.
10. No recurrent or severe peptic ulcer or diverticular disease.
11. No recent acute, severe hypotension with anemia, coma, or pulmonary failure.

Relative:

1. Age less than 55 years (with rare exceptions).
2. No juvenile onset or insulin requiring adult onset diabetes mellitus with evidence of secondary complications.
3. Severe cardiac cachexia with or without ascites.
4. Sound psychological make-up and family support.
5. Ability to comply with medication and follow-up regimens.

SCOPA is heavily involved with donor awareness education directed at both the medical and lay communities. Finally, and just as importantly, SCOPA provides South Carolina families who have suddenly lost a loved one the opportunity to salvage something positive from an otherwise tragic situation through organ donation.

Relatively strict donor criteria are also important to avoid the problems of early graft dysfunction (Table II). Because the majority of transplanted hearts require distant procurement,² local cardiologists are often called upon to evaluate

TABLE II

MUSC DONOR SELECTION CRITERIA

1. Brain death, donor consent given.
2. Age under 40 for males, 50 for females (with exceptions).
3. ABO blood group compatibility with recipient.
4. No evidence of cardiac disease: history, physical exam, EKG, chest x-ray, echocardiogram, rarely coronary angiogram.
5. Major inotropic support not required (dopamine less than 3-5 mg/kg/min with normal filling pressures).
6. No history of malignancy (except CNS).
7. No active infection including hepatitis and human immune deficiency virus.
8. Donor size no less than 10-15% below recipient.

donors. Echocardiography has been a particularly useful tool in both detecting occult lesions and in allowing the use of donors who might otherwise summarily be excluded on the basis of chest trauma.

Immunosuppression involves the careful screening for evidence of rejection and administration of a combination of immunosuppressive medications in doses that prevent rejection while avoiding major or dose related side-effects and infection. The initial immune response to a transplanted organ begins when circulating T lymphocytes distinguish graft cell surface antigens that do not belong to the host. These lymphocytes then stimulate macrophages and other lymphocytes to secrete the lymphokines interleukin I and II, which cause the proliferation of suppressor/cytotoxic and helper T cells, which in turn attack the graft. Routine transvenous endomyocardial biopsies under fluoroscopic control allow the careful histologic monitoring of the graft for the presence and severity of rejection. The immunosuppressive regimen can then be tailored to the individual patient.

Immunosuppression protocols vary from center to center. *Cyclosporine A* has become the most important single drug available. It acts predominantly on activated T helper cells to prevent the release of interleukin 2, the trophic factor for

activation of T-helper and cytotoxic cells. Cyclosporine's major toxicities are hepatic and renal with most patients developing some elevation in resting blood pressure and serum creatinine. Many drugs interact with cyclosporine A increasing or decreasing blood levels and therefore toxicity, making careful dosage adjustment to measured blood levels essential. *Azathioprine* inhibits DNA and RNA formation in proliferating cells thus preventing the proliferation of T suppressor/cytotoxic cells and B cells. Dosage is regulated according to peripheral white blood count. *Corticosteroids* block interleukin I release from macrophages preventing the activation of both T cytotoxic and T helper cells. The *antilymphoblast* and *antilymphocyte globulins* bind to T cells, decreasing their number and masking their antigen recognition sites. A combination of these agents is used for initial immunosuppression, with cyclosporine, azathioprine and corticosteroids in tapering doses to maintain immunosuppression. Initial therapy for rejection episodes is usually methylprednisolone with the antithymocyte globulins reserved for steroid resistant rejection. The incidence of rejection as reported from various centers varies tremendously and may be the result of differing patient population, protocols, or even the definition and grading of rejection.

As is evident from the patients described, the central problem of transplantation is immunosuppression and the balance between rejection and infection. The causes of death in cardiac transplant recipients remain infection (37.8%), rejection (33.1%), graft failure (24.8%), pulmonary complications (2.2%), and malignancy (2.1%).² The patterns of rejection and infection are changing with improved immunosuppressive therapy. With cyclosporine A, acute rejection is typically more indolent but easier to control, where chronic vascular rejection, manifested as graft atherosclerosis, is becoming an increasing cause of late graft failure. Similarly, the incidence of bacterial infection is decreasing while fungal agents, particularly candida, aspergillus, and cryptococcus, and viruses such as cytomegalovirus, and the herpes viruses cause substantial morbidity.⁹ The results of cardiac transplantation have improved remarkably over the last decade. The use of cyclosporine A especially in combination with azathioprine and prednisone has resulted in one-year survival rates of 80-85 percent and five-year survival rates

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of 75 percent.² Quality of life is substantially improved as well. Long-term follow-up of survivors reveals rehabilitation rates of better than 90 percent with 50 percent of patients returning to work.¹⁰

The median hospital charge for our first seven transplants was \$57,289.00. The Johns Hopkins Hospital reported a median cost of \$50,721 for 42 patients from 1983 to 1986.¹⁰ Subsequent hospitalizations for yearly coronary angiography and for treatment of rejection episodes or infectious complications must also be considered.

The other costs of maintaining a cardiac transplant recipient are those of medication, outpatient endomyocardial biopsy, and laboratory evaluation for rejection surveillance and regulation of immunosuppression. Cyclosporine A contributes significantly to the expense, since the daily cost for a 70 kg recipient is around \$14.00 per day during the first year. Dosage levels are decreased subsequently, but never stopped.

The expenses of cardiac transplantation must be weighed against the costs of maintaining patients with end-stage heart disease. Our first patient spent three weeks on intravenous inotropic support in the intensive care unit at a cost of \$54,000 before a suitable donor could be found. If cardiac transplantations were not available, the length of that hospitalization would have been significantly longer. Repeated hospitalization for control of arrhythmias or congestive failure are the rule rather than the exception in end-stage heart disease. Further, since most recipients can be expected to return to work, the social cost of disability is replaced by a productive member of the work force.

The Medical University of South Carolina is a state and regional referral center for patients with all types of cardiac disease. It is also an international referral center for patients with cardiac arrhythmias. Because of the improved results with cardiac transplantation cited above, a decision was made in 1986 to develop a transplant program at MUSC so that the entire spectrum of surgical treatment for cardiac problems would be avail-

able within South Carolina. To that end, a surgeon with extensive transplant experience was recruited and subsequently a team consisting of other surgeons, cardiologists, pathologists, immunologists, and specialized nurses was organized. This report documents the results obtained by this team in its first year of operation. It is now clear that cardiac transplantation is a proven form of therapy for certain types of end-stage cardiac disease, that a significant number of such patients live in S.C., and that success equivalent to that obtained from other excellent centers can be obtained at MUSC. At the current time, the major limitation locally (as well as nationally) is the lack of acceptable donors and hopefully, with increasing awareness on the part of the public and the medical profession, organ donation will increase. □

The authors would like to acknowledge the contribution of all of the members of the cardiac transplant team as well as those of the S.C. Organ Procurement Agency.

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PULMONARY BLASTOMYCOSIS: A CASE REPORT AND REVIEW OF THE LITERATURE*

G. PAUL ELEAZER, M.D.

While not a common disease, Blastomycosis is endemic in the state of South Carolina and physicians should be familiar with its clinical manifestations. This article will present a recent case of pulmonary Blastomycosis and is followed by a review of the literature.

CASE REPORT

A 65-year-old black male was initially admitted to the S. C. Department of Mental Health on 10/21/86 for treatment of alcoholism with presumed alcohol related dementia. He had been transferred to the Crafts-Farrow State Hospital from another hospital where he had been treated for delirium tremens.

After admission to Crafts-Farrow State Hospital, the patient developed hemoptysis and was transferred to Byrnes Medical Center for further evaluation and treatment.

The patient's past respiratory history was pertinent for having pulmonary tuberculosis treated in 1972 at a sanatorium with three drugs and followed at least yearly since then by his local health department without recurrent disease. He had sputums for AFB culture and smear sent from his previous hospitalization that were negative at the time of admission to Byrnes Medical Center. His occupational history was remarkable for sporadic employment as a construction worker in the housing industry. He had lived most of his life in Cherokee County with only rare visits outside of South Carolina.

The patient had a long history of cigarette use and had several episodes of bronchitis. He had been admitted in early September to his local hospital with the diagnosis of acute bronchitis. During that stay, he developed hemoptysis which was evaluated with AFB smears which were negative, and a lung scan which was suggestive of

pulmonary emboli. He was not anticoagulated because he was felt to be noncompliant and at a high risk for bleeding due to alcoholism.

He reported several episodes of hemoptysis in the previous three weeks in addition to coughing up small to moderate amounts of yellow mucus intermittently for several months. He denied fever, chills, weight loss, or night sweats.

PHYSICAL EXAMINATION

The patient's admission physical examination was remarkable for the following: Temp. 98.8, Resp. 24, BP 150/86, evidence of old left eye enucleation, no adenopathy, tubular breath sounds in the left mid-lung field and right apex without rhonchi or rales, hepatomegaly with the liver edge palpable 8 centimeters below the right costal margin, rectal examination showed a small 0.5 cm. prostatic nodule, and guaiac negative stool.

LABORATORY

Admission laboratory data included an arterial blood gas on room air showing a pH of 7.40, PCO₂ 34, PO₂ 77. An automated chemistry profile was remarkable for a creatinine of 1.5, glucose 113, total protein 9.2, albumin 3.9, globulin 5.3, alkaline phosphatase 105 (29-92), LDH 128 (92-186), and SGOT 23 (7-33). WBC 7.4 with a normal differential. Hemoglobin 10.9, hematocrit 32. A dipstick urinalysis was negative for blood, protein, glucose, ketones. Microscopic urinalysis showed 1-2 RBC's, 5-9 WBC's, 1+ mucous, trace bacteria. Chest x-ray showed a left perihilar infiltrate and right upper lobe infiltrate.

COURSE

The patient was admitted to the medical service for further evaluation of his hemoptysis. His sputum was purulent on admission and he was treated with antibiotics for presumed bacterial bronchitis with some improvement in the volume of secretions. Multiple sputums for AFB were negative.

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FIGURE. Chest x-ray obtained shortly after admission showing a left perihilar infiltrate and right upper lobe infiltrate with possible cavity formation.

During the next two weeks, the patient had several other medical problems identified. These included an acute GI bleed secondary to a duodenal ulcer, a liver scan which showed a pattern compatible with chronic ethanol abuse, quantitative immunoglobulins elevated compatible with a polyclonal gammopathy, a bone marrow initially interpreted as showing a plasma cell dyscrasia but in light of later data interpreted as reactive marrow.

After approximately two weeks, outside roentgenograms were available and it was apparent that while the right upper lobe infiltrate had been present for years, the left lung infiltrate had been present for at least two months but less than one year. Bronchoscopy was performed. Initial results from washings and brushings were negative for bacteria, fungi, acid fast bacilli and malignant cells. A C-T scan of the chest was done because of a question of extrinsic compression of the left upper lobe bronchus and showed mediastinal

adenopathy.

The patient appeared relatively stable and his mental status had improved to the point where he was able to return home. He was discharged to be followed by his private internist at his request.

Shortly after discharge, the patient's fungal serologies returned. All of the complement fixation tests had been negative, but the *Blastomyces* immunodiffusion test for the A antigen was positive. Subsequently, fungal cultures from bronchoscopy returned positive for *Blastomyces dermatitidis*.

The patient's private physician was contacted. Because the patient appeared to have chronic persistent pulmonary disease, he was started on Ketoconazole 400 mgs./day. This was continued for nine months (at which time the patient stopped taking the medication). As of January 1988, the patient's chest x-ray had stabilized showing chronic apical scarring. From the standpoint of his Blastomycosis he had done well, although he has continued to have alcohol related medical problems.¹²

DISCUSSION

Blastomycosis was originally described in 1894 by T. C. Gilchrist who speculated that it was caused by a protozoan. Subsequently, Gilchrist identified fungal elements in skin lesions of patients and named the organism *Blastomyces dermatitidis*. Soon cases of systemic involvement were identified and further study revealed that in most instances the portal of entry for the organism was the lung. Since the early identification of this disease, much has been learned about its clinical spectrum, pathogenesis and treatment.¹

THE ORGANISM

Blastomyces dermatitidis is a dimorphic fungus that grows as a mycelium at room temperature and as a thick-walled yeast when incubated at 37 degrees centigrade which reproduces by highly characteristic thick-necked budding. It is endemic in the southeastern and south central portions of the United States, in several areas along the northern Mississippi River, and into central Canada. The fungus has been identified in Africa as well as on the North American continent.^{1, 4}

The office of the state epidemiologist at the S. C. Department of Health and Environmental

BLASTOMYCOSIS

Control reports that a total of five cases of blastomycosis were reported in 1986. Most of these occurred in the Piedmont section of the state.¹⁰ This patient had spent most of his life in Cherokee County which is in that part of the state. Cases have also been reported in dogs as well as humans in the state.¹¹

Blastomyces causes disease in both humans and dogs. It has been reported to occur in all age groups but is most common in young and middle-aged adults. Men are affected six to ten times as often as women, and it is more common in persons with outdoor vocations or hobbies.

The organism resides in acidic soil that is moist and enriched with animal excreta. Infection occurs after inhalation of aerosolized conidia after an incubation period of approximately 45 days.²

The patient discussed here had no specific history of exposure to heavily wooded soil but did have a history of working in the construction industry and could have had exposure during his work.

CLINICAL MANIFESTATIONS

Blastomycosis can present in many different ways depending on which organ system is involved. Often the diagnosis is initially overlooked because (1) the disease is relatively uncommon, and, (2) more common pathogens present in a similar clinical pattern.

Pulmonary disease can be divided into four types: Primary pulmonary infection which is asymptomatic (Type I), primary pulmonary infection with symptoms (Type II), primary pulmonary infection with rapid progression (Type III), and chronic persistent pulmonary disease (Type IV).

Many patients are asymptomatic with primary pulmonary infection (Type I). In an outbreak of 48 cases in Wisconsin, 46 percent of patients who had evidence of infection were asymptomatic.² Another outbreak in Minnesota identified 18 patients with evidence of infection but only seven had symptoms.³

Symptomatic disease (in Type II) often presents as an acute pneumonia. Clinically, acute disease is manifested by high fever, cough that eventually is productive of purulent sputum, myalgias, arthralgias, and occasionally, erythema nodosum. Pleuritis is also common. Most of these patients do

well with no treatment, showing resolution of symptoms over several weeks.^{1, 3}

On the other hand, rare patients with primary pulmonary infection have a more aggressive course with progressive pulmonary disease (Type III) which may be fulminant and rapidly fatal despite anti-fungal therapy.¹ Development of the Adult Respiratory Distress Syndrome (ARDS) has a particularly poor prognosis. Initial differentiation between these two groups can be difficult. Close observation is helpful in deciding which patients to treat. It is important to recognize that the majority of patients will do well without therapy.

Most patients with symptomatic pulmonary blastomycosis present with the chronic form (Type IV) of the disease. Their presentation is similar to that of patients with pulmonary tuberculosis, with low grade fever, night sweats, weight loss, productive cough and hemoptysis. Some of these patients will have had symptoms of acute pulmonary blastomycosis previously; however, most will not have had any previous symptoms at all. Chronic disease generally requires antifungal treatment.¹

The radiologic manifestations of pulmonary blastomycosis can vary widely. In one study, 44 percent of patients had air space disease, 26 percent a mass-like appearance, 19 percent interstitial disease, and 11 percent cavitory disease.⁶ A miliary pattern was observed in nine percent of patients reviewed by Stelling, et al.⁷

Hematogenous dissemination to other organs can occur during primary infection and is very common in patients with chronic pulmonary disease.

Cutaneous disease is common and may be the only evident site of infection. The typical lesion is a non-tender, non-pruritic nodule with crusting. A small abscess may be apparent if the crust is removed. There may be central healing leaving an atrophic scar. Large verrucous ulcers with heaped-up edges are very suggestive of the diagnosis.¹

Skeletal disease is present in 25 to 50 percent of patients with the spine, pelvis, skull, ribs, and long bones being the most common sites. Radiographs usually show osteolytic lesions similar to that seen in other granulomatous diseases. Arthritis may occur with osteomyelitis or in patients with other organ involvement.

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The male genitourinary tract is a common site of infection in disseminated disease. The prostate is most often affected with epididymis and testicular infection occurring less often. There have been reports of venereal transmission in men with prostatic involvement to their sexual partners. Most patients present with painful scrotal swelling or a deep suprapubic or perineal ache.^{1, 4}

Blastomycotic involvement has been reported in other organs including the adrenal glands, meninges, and larynx although these are less common and usually occur in the setting of multiple organ involvement.

DIAGNOSIS

The diagnosis of blastomycosis is best made by culture of the involved area. Previous attempts at serologic diagnosis have been (relatively) unsuccessful, though newer techniques may be useful.

The traditional serologic tests for blastomycosis have included complement fixation (CF) and immunodiffusion (ID). Complement fixation has been shown to have sensitivity and specificity of only 50 percent and 50 percent respectively. Immunodiffusion has been shown to be between 70 and 79 percent sensitive and in one study 100 percent specific.

A recent study suggested that by combining immunodiffusion results with enzyme immunoassay, highly predictive results could be obtained.⁵ Further confirmatory studies are pending.

Cultures of sputum, pus from cutaneous lesions, bronchial washings, biopsy material or prostatic secretions are grown on Sabouraud's agar slants. They should be kept for at least one month. Secretions may be treated with 10 percent potassium hydroxide and examined microscopically to make a presumptive diagnosis. Thick-walled, 8-15 micron spherical cells with wide-based unipolar budding are highly suggestive and may be adequate for initiating therapy pending culture results. Cytologic specimens from pulmonary washings may also reveal the organism.

TREATMENT

Once the diagnosis has been made, treatment with an antifungal agent may be started.

In cases of acute pulmonary blastomycosis, a two-week waiting period with close observation (in hospital, if necessary) is recommended to de-

termine which cases should be treated. If the patient is improving at the end of two weeks, therapy may be held and the patient's progress monitored. However, if at the end of two weeks, there is no improvement or the patient's clinical status is worsening, then it is recommended that antifungal treatment be initiated.^{1, 4} Patients with rapidly progressive disease should be treated early. Patients with chronic pulmonary or systemic disease generally require treatment, although less urgently than those with rapidly progressive disease.

Patients without life-threatening or meningeal disease who are immunocompetent may be treated with Ketoconazole. A National Institute of Health study showed that a dosage schedule of 400 mgs./day had a success rate of 80 percent with little toxicity. A dosage of 800 mgs./day was approximately 100 percent effective but is more toxic (mainly GI disturbances, nervousness, rash, gynecomastia in men or menstrual irregularities in women).⁸

Amphotericin B at a total dose of 2.0 to 2.5 grams over a period of 12 to 16 weeks is the treatment of choice for patients with life-threatening, rapidly progressive disease with multiple organ involvement or in immunocompromised patients.⁹

Surgery may be indicated for persistent pulmonary cavities or orthopedic lesions in some patients with chronic disease.

The prognosis of Blastomycosis varies with the stage of the disease. As already stated, acute pulmonary disease has an excellent prognosis even without treatment. Patients with chronic disease generally have cure rates of 80 to 90 percent. Patients with pulmonary disease accompanied by the adult respiratory distress syndrome (ARDS) frequently have a fulminant course which is rapidly fatal. Some studies indicate pleural involvement indicates a greater chance of relapse or death.⁹

Patients must be followed for an extended period of time since relapse has been reported to occur as late as nine years after treatment.

SUMMARY

A case of pulmonary Blastomycosis is presented. Blastomycosis is a fungal disease with variable manifestations. Most patients are either asymptomatic or present with self-limiting acute

BLASTOMYCOSIS

pulmonary disease. Chronic disease usually affects the pulmonary, cutaneous, skeletal or male genitourinary systems and generally requires treatment. Antifungal therapy with Ketoconazole in non-life-threatening disease and Amphotericin B in more serious disease is highly effective and the overall prognosis is good. □

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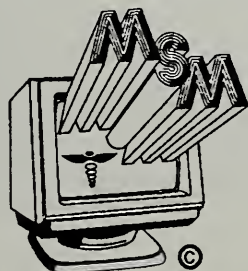
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METACLOPRAMIDE NEUROTOXICITY*

AL SANTOS, M.D.

GEORGE ARANA, M.D.

Metaclopramide has been reported to cause a number of neurologic side effects which can evade proper diagnosis and treatment. We illustrate this concern with a case report of a woman with a metaclopramide induced extra-pyramidal syndrome which on first presentation mimicked a cerebrovascular accident and who subsequently developed tardive dyskinesia.

CASE REPORT

A 72-y.o. female experienced the sudden onset of dysarthria and difficulty moving her tongue. She denied weakness, paresthesias, headache, diplopia, and ataxia. On exam there was dysarthric speech without hesitancy, facial asymmetry with symmetrical smile and symmetrical sensation, poorly elevated palate without deviation, and slight tongue protrusion toward the left. One week prior to this episode, endoscopic examination had revealed a duodenal ulcer, and she was started on sucralfate (Carafate[®]), cimetidine (Tagamet[®]), and metaclopramide (Reglan[®]). She was otherwise in good health with a history of mild memory dysfunction.

An EEG was interpreted as a normal awake and sleep recording. A plain and contrast enhanced brain CT scan showed no evidence of focal ischemic infarctions. ECG and chest x-rays were non-contributory. A carotid echo flow study did not suggest significant stenosis.

The following working diagnoses were recorded: (1) acute dysarthria, probably right hemispheric cerebral dysfunction with soft signs of left facial asymmetry and diminished palate elevation, vascular etiology most likely; (2) mild memory dysfunction, probable early senile dementia, Alzheimer's type; and (3) reactive ulcer disease. She continued to be treated with sucralfate, cimetidine, and metaclopramide.

On a two-week follow-up visit, the patient was no longer dysarthric and was free of symptoms suggestive of hemispheric or brain stem ischemia. Her duodenal ulcer was asymptomatic. She continued to receive the same medications.

Eight weeks later, her daughter reported a change in her personality, characterized by lethargy and lack of initiative. She had also developed constant chewing movements of her mouth and lips. Prominent oral-buccal-lingual dyskinesias were noted. In addition, there was definite cogwheeling at both wrists with reinforcement. She ambulated well with good postural stability. Her blood pressure was 160/70.

Metaclopramide was discontinued. All symptoms resolved after six months.

DISCUSSION

This patient experienced two distinct neurologic effects associated with the use of metaclopramide. The dysarthria, an extra-pyramidal dystonia was not suspected, and thus the medication was continued. She subsequently developed classic symptoms of tardive dyskinesia.

Metaclopramide (Reglan TM), used for the treatment of emesis and reflux esophagitis, has central dopamine blocking effects. All antipsychotic agents approved for use in the USA (Table 1) and other medication with central dopamine blocking function have common neurologic side effects due to their effects on the extrapyramidal system. These include acute dystonias, pseudoparkinsonism, akathisia, and tardive dyskinesia:

Acute Dystonias are most likely to occur within the first week of treatment. Patients may develop acute muscular rigidity and cramping, usually in the musculature of the neck, tongue, face and back. Occasionally, patients report the subacute onset of tongue "thickness" or difficulty swallowing. Opisthotonos and oculogyric crisis also may occur. Acute dystonias can be very uncomfortable, experienced by patients as frightening and occasionally have serious sequelae. Muscular

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TABLE 1
Antipsychotic Medication Approved in USA

Phenothiazines:	Chlorpromazine	(thorazine)
	triflupromazine	(Vesprin)
	Mesoridazine	(Serentil)
	thioridazine	(Mellaril)
	Acetophenazine	(tindal)
	Fluphenazine	(Prolixin, Permitil)
	Perphenazine	(trilafon)
	trifluoperazine	(Stelazine)
Thioxanthenes:	Chlorprothixene	(taractan)
	thiothixene	(Navane)
Dibenzoxazepine:	Loxipine	(Loxitane, Daxolin)
Indolone:	Mabendone	(Malsan)
Dephenylbutylpiperidines:	Pimoxide	(Ovap)

cramps can be severe enough to cause joint dislocation, and, most dangerously, laryngeal dystonias can occur with compromise of the airway. Anticholinergic agents, such as diphenhydramine (Benadryl), 50 mg IM or IV, or benztropine (Cogentin), 2 mg IM or IV, usually bring rapid relief.

Pseudo-parkinsonism appears after several weeks of therapy. These symptoms include bradykinesia, rigidity, cogwheeling, tremor, mask-like facies, stooped posture, festinating gait, and drooling. Where these side effects are severe, an akinesia may develop which can be indistinguishable from catatonia. Treatment is again with anticholinergic agents and/or reduction of dose, or discontinuation of the medication.

Akathisia is an intensively unpleasant need to move. Patients often appear restless with symptoms of anxiety, agitation, or both. Benzodiazepines (e.g., lorazepam, 1 mg tid), anticholinergics (e.g., benztropine, 2 mg bid), beta adrenergic blockers (e.g., propranolol, 10-20 mg tid), and clonidine (0.1-0.3 mg tid) may all provide symptomatic relief to some patients.

Tardive Dyskinesia (TD) is a syndrome of long-standing or permanent abnormal involuntary movements that is most commonly caused by the long-term use of dopamine blocking agents. It presents clinically as involuntary movements of the tongue, facial and neck muscles, upper and lower extremities, truncal musculature, or occasionally, of muscle groups that subserve breathing

and swallowing. Bucolingual-masticatory movements usually are seen early in the course of the disorder and are characterized by tongue thrusting (often visible to the observer as the tongue pushing against the cheeks or lips), tongue protrusions, lipsmacking, puckering of the lips, chewing movements, and cheek puffing. Excessive unnecessary facial movements including grimacing, blinking, and rapid ticlike movements of the face or preorbital musculature also can be seen in the early phases of TD.

Metaclopramide's central action as a selective D_2 receptor antagonist parallels those of antipsychotic medications. Dystonic reactions have been reported in one percent of patients.¹ Pseudo-parkinsonism has been reported more frequently in youth-aged patients and in individuals with renal failure with doses above 30-40 mg/day.^{2, 3} Akathisia has been reported in as many as nine percent of patients.⁴ TD has been reported with a wide range of doses and treatment duration; however, there is a preponderance of case reports about individuals over age 70.^{3, 5, 6} A recent report describes the development of the "neuroleptic malignant syndrome" in two women treated with metaclopramide.⁷

TD has also been reported in association with the use of other drugs and from other toxicities, but these are much less common⁸⁻¹² (Table 2). Such unusual complications are also seen with a variety of medical disorders (Table 3).

TABLE 2

Tardive Dyskinesia from Drugs
and Other Toxicities

Neuroleptic Antipsychotics
Tricyclic Antidepressants
Antihistamines
Lithium
Anticholinergics
Phenoin
L-Dopa
Amphetamines
Metaclopramide
Compazine
Lorazepam
Magnesium and other heavy metals

CONCLUSIONS

Indications for the use of Metaclopramide lead to its frequent use in older age groups sometimes by physicians who may not be aware of the acute and chronic toxicities of dopamine blocking agents. Given that advanced age is a risk factor for TD and that medical practitioners may not be following these neurotoxicities, the potential for significant iatrogenic pathology is evident.

The differential diagnosis of movement disorders such as TD includes a variety of primary neurologic and metabolic disorders as well as drugs and other toxicities. TD rarely develops in patients with less than three months of drug exposure. The only firmly established risk factor for TD is age over 50 although there is some evidence that females may be at greater risk.

The best approach to TD is to discontinue the medication as soon as signs occur with the hope that over time the symptoms will regress. Discontinuation or decrease of the dosage may lead to a temporary worsening of the TD symptom but appears to be the best strategy.

TABLE 3

Neurologic and Metabolic Disorders
Similar to Tardive Dyskinesia

Neurologic disorders:
Wilson's disease
Huntington's disease
Brain neoplasm
Fahr's syndrome
Idiopathic dystonias (includes
blepharospasm, mandibular dystonia,
facial "tics")
Mege's syndrome (spontaneous oral
dyskinesias)
Torsion dystonia (familial disorder without
psychiatric symptoms)
Postanoxic or postencephalitic
extrapyramidal syndromes

Metabolic disorders:
Hypoglycemia
Hyperthyroidism
Renal failure
Hepatic failure
Hypoparathyroidism

An aspect of treatment that is particularly complicated is that the drug causes TD but also masks the syndrome. The physician should periodically assess their metaclopramide-responsive patients with drug-free trials and neurological assessments of adventitious buccolingual movements to rule out tardive dyskinesia.

We would urge all physicians who use metaclopramide to consider the following: (1) if the patient responds well and does not manifest extrapyramidal signs and is to be treated chronically with this agent, he/she should be periodically assessed for TD; (2) if the patient appears to develop an extrapyramidal syndrome, consider an alternative medication strategy. □

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Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in

moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.

- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

• Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea): 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever): 1.5%; usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
 - As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
 - Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
 - Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%; and, rarely, thrombocytopenia.
- Abnormalities in laboratory results of uncertain etiology**
- Slight elevations in hepatic enzymes.
 - Transient fluctuations in leukocyte count (especially in infants and children).
 - Abnormal urinalysis; elevations in BUN or serum creatinine.
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THE PERCEPTION OF BREATHLESSNESS*

J. W. R. BOLTON, M.D.

D. S. WEIMAN, M.D.**

G. N. OLSEN, M.D.

INTRODUCTION

The perception of breathlessness is highly subjective and poorly understood. The mechanism of the feeling of shortness of breath remains unclear as does its variability from person to person. Yet, we as physicians routinely question patients as to their feelings of shortness of breath even to the point of specifics, including when and how it takes place, how it is relieved, as well as its degree. This is done to assess treatment modalities (such as for asthma) and determine a patient's ability to withstand pulmonary resection. Psychophysical interactions do seem to play an important part in this mechanism. Although studies have been carried out concerning the perception of breathlessness and its mechanics related to airflow resistance, a literature search has revealed no published data to indicate how this perception of breathlessness applies clinically to pulmonary function in a heterogeneous population of patients. In an effort to relate the perception of breathlessness to pulmonary function, we studied 70 male patients. Our data show that dyspnea is so subjective that it cannot be reliably used as an indicator of pulmonary function or as a predictor of performance on a stair climb test. It should not be used to measure a patient's response to treatment nor should it be used in assessing a patient's ability to withstand a pulmonary resection.

METHODS

Seventy male patients with a mean age of 56.9 years scheduled for pulmonary function testing were subjected to a stair climb and simultaneously evaluated for their perception of breathlessness. The dyspnea score was based on a modified Borg Scale (as described by Burdon, et. al.) (Figure 1).

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FIGURE 1

THE MODIFIED BORG SCALE

0	Nothing at all
0.5	Very, very slight (just noticeable)
1	Very slight
2	Slight
3	Moderate
4	Somewhat severe
5	Severe
6	
7	Very severe
8	
9	Very, very severe (almost maximal)
10	Maximal

This scale is based on numbers 0 through 10 assigned to words describing increasing shortness of breath (i.e., 0=nothing at all, 3=moderate, 5= severe, and 10 = maximal).

Baseline data including pulse rate, blood pressure, respiratory rate, age, and dyspnea score were obtained prior to the stair climb. The patient was allowed to walk up the stairs at his own "moderate" pace (timed by stopwatch) and encouraged to proceed as far as possible to a maximum of five flights (127 steps) without stopping. When the patient stopped, the time in seconds, number of stairs climbed, and reason for stopping was noted. In addition, the pulse rate, blood pressure, respiratory rate, and dyspnea score was recorded immediately post-climb, at two minutes after stopping, and at five minutes after stopping.

The first 25 patients performed the stair climb after their pulmonary function studies were completed. The remainder of the patients performed the stair climb immediately prior to their pulmonary function tests in order to avoid investigator bias. The dyspnea scores pre-climb, immediately post-climb, two minutes post-climb, and five min-

THE PERCEPTION OF BREATHLESSNESS

utes post-climb were then analyzed to determine their relationship with vital signs, pulmonary function tests and performance on the stair climb.

All spirometric pulmonary function studies were performed using standard techniques on a wedge spirometer with x-y plot of flow volume loop (Med Science 525 Pulmonizer) standardized each morning by either of two trained technicians. The stair climb and dyspnea score determination was administered to all patients by the primary author (JWRB). Lung volume determinations were by helium dilution and carbon monoxide diffusing capacity used by single breath method. Maximum voluntary ventilation was directly measured rather than estimated from $FEV_1 \times 40$. Standard prediction equations were used to calculate percent of predicted based on height, sex, and age.

Statistical analysis was done using the Pearson formula for correlation coefficients. Data are reported as mean \pm standard deviation (SD). Statistical significance was defined as a p level of 0.001. The critical value for the correlation coefficient in our population was 0.38.

RESULTS

Seventy patients with a mean age of 56.9 ± 11.5 years (ranging from 21 years to 79 years) were studied. The mean pre-climb dyspnea score was 1.66 ± 1.93 SD (very slight to slight shortness of breath) and immediately post-climb the score was 4.30 ± 3.07 SD (somewhat severe to severe shortness of breath). The dyspnea score two minutes after the completion of the stair climb remained elevated at 2.49 ± 2.17 SD (slight to moderate shortness of breath), but had returned to pre-climb levels by five minutes post-climb at 1.74 ± 1.82 SD.

Analysis of the results revealed no significant relationship between the dyspnea score and any of the variables including age ($r=0.15$ to 0.31), number of stairs climbed ($r=0.11$ to 0.34), FEV_1 ($r=-0.25$ to -0.36) or any other spirometric, lung volume or diffusion parameters of the pulmonary function testing. There was however a strong relationship between the pre-climb and post-climb dyspnea scores ($r=0.52$ to 0.89) (Table 1).

DISCUSSION

The precise mechanism of the perception of

TABLE I
Correlation Coefficients of Pre-Climb and Post-Climb Dyspnea Scores

	<i>DYSP</i> <i>BASE</i>	<i>DYSP</i> <i>POST</i>	<i>DYSP</i> <i>+2</i>	<i>DYSP</i> <i>+5</i>
DYSP BASE	1.00	0.52	0.66	0.74
DYSP POST	0.52	1.00	0.73	0.59
DYSP +2	0.66	0.73	1.00	0.89
DYSP +5	0.74	0.59	0.89	1.00

breathlessness remains poorly understood and seems to vary depending upon the type and extent of existing lung disease. Altose aptly described breathlessness as "the subjective expression of the perceptual intensity of stimuli that arise during or in association with the act of breathing" and likens this to the spectrum of degrees and methods of perception with pain.¹

There have been numerous studies attempting to define the specific origin of the signal which the brain interprets as the perception of breathlessness in asthmatics and patients with chronic lung diseases as well as in subjects with normal lung function. The majority of these studies have related some aspect of pulmonary function with a subjective measurement of dyspnea. There are a variety of signals involved with respiration which must be considered. These include the afferent signals from chemoreceptors in the blood and brain, and mechanoreceptors in the muscles of respiration, airways, lungs and chest wall as well as their resultant efferent commands from the central nervous system.¹ These signals are evident as one studies the effects of changes in the acid and gas content in the blood as well as the effect of such manipulations as Vagal nerve disruption on dyspnea and respiratory response.^{2, 3}

In considering the interaction of these signals, the suggestion by Le Blanc and co-workers that the perception of respiratory muscle effort provides a unitary hypothesis for the mechanism of breathlessness is quite reasonable.⁴ He found that breathlessness was closely related to factors such as the transdiaphragmatic pressure generated, velocity and extent of muscle shortening, and frequency and cycle of muscle contraction which are known to contribute to respiratory muscle effort.⁴ This concept is further supported by studies con-

THE PERCEPTION OF BREATHLESSNESS

cerning the "second wind" phenomenon. Scharf and colleagues found that, for as yet some unknown reason, there is a change during exercise to improved contractility of the diaphragm which allows for decreased dyspnea and a "second wind," thus suggesting that respiratory muscle fatigue may be involved as a chief cause of dyspnea.⁵

Burdon and co-investigators related increasing dyspnea to the degree of airway obstruction as indicated by decreasing forced expiratory volume in one second (FEV1) in asthmatics.⁶ This would cause an increase in the work of breathing. Likewise, Ward and Stubbing found that patients with chronic airflow limitations, as well as normal patients, both perceive the magnitude of added resistance loads as a direct function of the inspiratory pressures and an indirect function of added resistance.⁷ Ward and Stubbing also found that the two most important factors affecting the sensory magnitude were the age of the patient and the pattern of breathing adaptation in overcoming the added resistance loads.⁷ This adaptation to resistance loads is substantiated in several studies which essentially conclude that patients with impaired pulmonary function are more likely to perceive minor changes in added resistance to breathing that are imperceptible to normal subjects.⁸⁻¹²

Another consideration in the discussion of dyspnea concerns the subjective measurement of breathlessness. There are numerous methods of assessing breathlessness. These include open-ended scales, visual analog scales, interval scales, ratio scales, and others.^{1, 6, 13-16} Each has its own strengths and weaknesses. The use of varied scales further hinders comparisons among studies. Realizing that a category scale is not necessarily the most valid, it was chosen in this study for its simplicity and ease in statistical analysis.¹⁷⁻¹⁹ It also contained information most likely to be obtained from the patient's history. With the modified Borg Scale the verbal descriptions are placed so that a doubling of the numerical value corresponds to a two-fold increase in sensation intensity.

Although prior studies have tested dynamic pulmonary function during respiratory manipulation, we chose to test only the static resting state pulmonary function, and relate the dyspnea score

at pre- and post-stair climb to the measured pulmonary function tests in order to determine the predictive quality of the subjective scale. In addition, because of the strong relationship of the stair climb to pulmonary function tests and in particular the FEV1, the dyspnea score was also compared to the performance on the stair climb.²⁰

Across the board there was very little correlation with any of the measured parameters. Although there is a very strong correlation between performance on a simple stair climb and pulmonary function tests, this did not hold true for the dyspnea scale. The only significant correlations were among dyspnea scores themselves and their increase during the stair climb. This would suggest that the perception of breathlessness does indeed increase with exercise and in the subsequent increase in working of breathing. Although Burdon and co-workers suggest that in any individual asthmatic patient there is a constant relationship between the degree of breathlessness and changes in the FEV1,⁶ our study does not support such a relationship between the dyspnea scores and the baseline function tests.

CONCLUSION

Based on our study of a heterogeneous population of male patients, we can only conclude that there is support for the thesis of increasing breathlessness with increasing work of breathing (regardless of baseline pulmonary function) as is evidenced by increasing dyspnea scores during a stair climb test. Whereas stair climbing distance correlates well with results of pulmonary function tests (and FEV1 in particular), the perceived degree of dyspnea does not. In addition, the dyspnea score when related to static, resting pulmonary function tests is so subjective and variable among patients that it cannot be reliably used as an indicator of pulmonary function or as a predictor of performance on a stair climb test. Hence, from a preoperative standpoint, the surgeon would be better served by relying on the performance on a stair climb rather than the modified Borg Scale to infer physiologic operability in prethoracotomy patients. □

Special thanks to Carl Hornung, Ph.D., for help with statistical analysis and Mildred Corbett and Celeste Reynolds for pulmonary function testing.

THE PERCEPTION OF BREATHLESSNESS

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PHYSICIAN RECOGNITION AWARDS

The following SCMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned.

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STATION-TO-STATION COLLECT



Editorials

The big news in this month's issue is the story of heart transplantation in South Carolina. The paper by Doctors Crumbley, Kratz, and Crawford surely marks the beginning of a new era. From the editorial viewpoint, the call by the authors for increased awareness regarding organ donation should be echoed by all of us.

The first guest editorial, below, addresses a problem of long-standing concern to its author, Dr. Arthur F. DiSalvo. In fact, he is a recognized authority on the blastomycosis puzzle. The second guest editorial deals with continuing medical education preferences and should be of value to those who seek to put on such events.

—CSB

BLASTOMYCOSIS: AN ENVIRONMENTAL PUZZLE

When a diagnosis of blastomycosis is made the patient frequently asks, "How did I get this?" The physician is at a loss to explain.

A very interesting case of blastomycosis is presented in this issue.¹ Dr. Eleazer discusses the clinical manifestations, diagnosis, and therapy of this disease. However, the epidemiology of blastomycosis and the ecology of *Blastomycosis dermatitidis* remain an enigma.

Although the organism was first described in 1894, it was not isolated from nature until 1961.² Subsequent isolations of *B. dermatitidis*, from environmental sources, supported the hypothesis that the organism exists in nature in moist, organic material such as decaying wood, vegetation, animal dung, and soil.³⁻⁴ Numerous attempts, however, were unsuccessful at isolating the fungus from suspected material associated with patients. Not until 25 years later were definitive reports of *B. dermatitidis* infection associated with an environmental isolate.⁵⁻⁷

Thirty-one cases have been reported to DHEC since 1972 when blastomycosis was made a reportable disease, an average of two patients per year. The greatest number of patients was diagnosed in 1981 when eight South Carolinians were infected with this fungus.

I have collected data on 70 confirmed cases of blastomycosis from residents of South Carolina.

Sixty-two patients were male and eight were female, a ratio of 8:1. Age has been recorded for 58 patients. The youngest patient was 25 years of age and the oldest was 81 with distribution through all decades. The largest group, 17 patients, were in the fourth decade of life.

In the United States blastomycosis occurs most frequently in the north central United States and to a lesser extent down the Mississippi River Valley. South Carolina is on the fringe of the endemic area. Worldwide, there have been additional cases reported from North America (Canada and Mexico) and a few cases from Europe, Asia, and Africa. It is interesting to note that of the 62 South Carolina patients where county of residence is known, 44 (71%) resided above the fall line.

Since *B. dermatitidis* has been associated with the outdoor environment, it would seem reasonable that those patients whose occupation was close to nature would be more likely to be exposed to the organism. Unfortunately, occupational data are only available for 27 of the South Carolina patients. Of these, 15 (56%) indeed had outdoor occupations: six were farmers, two were loggers, six were in construction, and one operated earth-moving equipment. In addition, it is known that at least three others with indoor occupations had outdoor avocations. One patient raised cattle, one was a camper, and the other was a hunter. Thus, at

least 18 of the 70 South Carolinians were exposed to the suspected ecological niche of *B. dermatitidis*.

I have been collecting data on this disease in South Carolina for 20 years. It would be helpful if physicians would elicit a vocational and avocational history from patients with blastomycosis. Perhaps when enough data are obtained, this environmental puzzle may be solved.

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CONTINUING EDUCATION PREFERENCES IN THE MIDLANDS

What determines attendance at continuing medical education programs? From a survey of 450 Midlands physicians, it appears that the topic is most important followed by the speaker's qualifications and the location of the meeting. Most physicians prefer a lecture format for continuing education programs conducted on a half or full day Friday, Saturday, or Wednesday. The majority had no seasonal preference for meetings, but, interestingly, those that did preferred winter and spring with only three choosing summer and six fall.

The results of this survey of Richland Memorial Hospital medical staff physicians is very similar to a 1983-1984 survey taken of the entire state.¹ However, this time a much higher percentage of the physicians (32%) responded to the mailed questionnaire. The questionnaire was completed by 23 internists, 18 surgeons, 15 orthopaedists, 12 obstetricians, 10 family practitioners, and 56 from other specialties and subspecialties.

One might speculate from these results that the reason that many continuing education programs are not well attended relates to the lack of interest

in the topic being presented. This may in turn largely be due to the specialization in medicine. Those that have planned meetings that are designed to appeal to groups with varied interests have found that it is not only a very difficult problem, but that speakers have an almost impossible task of defining what should be included. The number of continuing education programs that are offered nationally has increased significantly during the past five years, and that also may partially be due to separate meetings by specialty and subspecialty groups. Continuing education program planners may have to become as specialized as medicine has become.

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LETTER TO THE EDITOR

DRUG SCREENING IN THE WORKPLACE

To the Editor:

Drug screening in the workplace has become a hot topic in the workplace and many SC physicians act as the primary care physician to local industry. Published reports of the prevalence of drug screening show that about 16 to 35 percent of Fortune Five Hundred companies are screening for drugs,^{1, 2, 3} however, in our rural South Carolina county of Chester the percentages ran much higher. I have recently completed a survey of personnel managers in our county for a talk on Employee Assistance Programs. My results were quite different.

I surveyed 21 companies by phone in a 24 hour period. These companies represent about 95 percent of the industrial jobs available. Of these, 14 (66%) require pre-employment drug testing. Of the seven who did not, two indicated that they were entertaining the possibility and one more was planning implementation within a week or so.

Of the 14 currently testing at time of employment, only three also employ "for cause" intra-employment testing usually following injury. Interestingly, only four industries have Employee Assistance Programs available (all through the County Drug and Alcohol Commission), and one of the four with an EAP in place does NOT engage in pre-employment screening.

In our experience these companies have looked to the medical professions to provide expertise in this area. Often they have been ignorant of such factors as confounding medications, the importance of confirmatory testing and the need for placement of individuals already employed into treatment. The idea that in some circumstances, a recovering alcoholic is protected by non-discrimination legislation is met with disbelief.⁴ Often when industry starts testing, they are astonished at

the number of positive tests (running in our experiences as high as 15 percent. Most of our tests are positive for marijuana, a few for cocaine and of course the most common drug of abuse, alcohol is not even screened for in a urine specimen.). Often only then are companies willing to begin looking at treatment options such as EAP etc.

Chester county is primarily light, unionized industry, textiles, lumber and manufacturing. Three years ago not one industry was performing drug testing. Now fully sixty plus percent has adapted it as the standard. And every new industry in our door in the last year has requested this in their pre-employment exam.

As drug testing moves into the mainstream of corporate thinking, it will become incumbent on physicians who work with industry to become knowledgeable in these areas of testing and treatment.⁵

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NEURAL TUBE DEFECTS IN SOUTH CAROLINA COUNTIES*

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The neural tube defects (NTDs) are malformations of the developing brain and spinal cord which include anencephaly, spina bifida and other less common neurological conditions. They rank second only to cardiac abnormalities as a cause of major congenital malformations in the United States.¹ Fetal and infant mortality associated with most of the NTDs is extremely high. A complex epidemiologic pattern has emerged for the NTDs which suggests a multifactorial etiology that includes both genetic and environmental components.

A marked geographic variation in the rates of NTDs has been observed, suggesting that common interacting factors may be more prevalent in certain populations and/or geographic regions. The highest rates occur in parts of the United Kingdom, especially in Ireland and Wales, and the lowest rates occur in Japan, with North America being in between.² This East-West gradient is also observed in the United States where higher rates are found in the eastern and southern region

than in the western region.³ The rate of NTDs is two to three times higher among white births than among black births.⁴

We examined county-specific rates of anencephaly and spina bifida in South Carolina over an 11-year period from 1975 through 1985. We hope that this analysis will provide useful information to health-care workers in targeting local areas for implementation of maternal screening programs, such as alpha-fetoprotein testing and ultrasound evaluation, and in the provision of services to affected infants and children. Additionally, examination of county variation in the occurrence of the NTDs may suggest important environmental and/or genetic determinants of incidence.

METHODS

Data were derived from two sources: a computerized file of information contained on certificates of reportable fetal death; and a linked live birth/infant death cohort file of information contained on certificates of live birth and on any corresponding death certificates for infants who died within one year of birth. These files were provided by the Office of Vital Records and Public Health Statistics of the South Carolina Department of Health and Environmental Control. Data were available on a total of 552,653 live births and 7,269 fetal deaths for the study period 1975

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NEURAL TUBE DEFECTS

through 1985. Cases of anencephaly and spina bifida were identified via computer search for records with ICDA 8 and ICDA 9 Codes 740-741. Classification of cases into the anencephaly category was allowed whether or not other malformations, including spina bifida, were also reported. Cases with ICDA Codes 741, 741.0 and 741.9 were classified as spina bifida only if they were not also reported to have had anencephaly. County rates were indirectly race-adjusted by the method of Chiang using the state rate as the standard.⁵ Adjusted county rates are significantly different from the state rate when the 95% confidence interval for the county rate fails to include the state rate.

RESULTS

Two hundred fifty-one cases of anencephaly and 227 cases of spina bifida were reported in South Carolina over the 11-year period. Only one infant was reported to have had both anencephaly and spina bifida. For anencephaly, 97 (39%) of the cases were reported as live births and 154 (61%), as fetal deaths. For spina bifida, 195 (86%) of the cases were reported as live births and 32 (14%), as fetal deaths. Sixty-three of the cases of anencephaly were identified from the birth/infant death file where anencephaly was coded as the primary cause of death without a corresponding congenital malformation code on the birth certificate.

The overall state rate per 10,000 live births plus fetal deaths was 4.5 for anencephaly and 4.1 for spina bifida. When anencephaly and spina bifida were combined, the overall rate for the two NTDs was 8.5. For white births, the overall rate of NTDs was 6.0 and for nonwhites, the rate was 2.5.

When two separate time periods in the 11-year study period (1975 through 1979 versus 1980 through 1985) were examined, the overall rate of NTDs declined from 9.4 to 7.8 per 10,000, respectively. For the two time periods, a proportionally greater decline in the overall rate of NTDs was noted among nonwhite births which declined by about 33% from 7.6 to 5.1, as compared to white births which declined about 10% from 10.7 to 9.6.

Table 1 presents the observed number of CNS malformations over the 11-year period by county and the race-adjusted rates with 95% confidence intervals. For anencephaly, race-adjusted rates ranged from zero in six counties to 15.5 per 10,000 in Hampton County. The rate of anencephaly was

significantly higher than the overall state rate in the counties of Chester and Hampton and significantly lower in Laurens County. Counties in the north-central region, primarily along the border with North Carolina, and counties in the lower southern region, bordering Georgia, tended to have rates that were in the highest quartile (Figure 1).

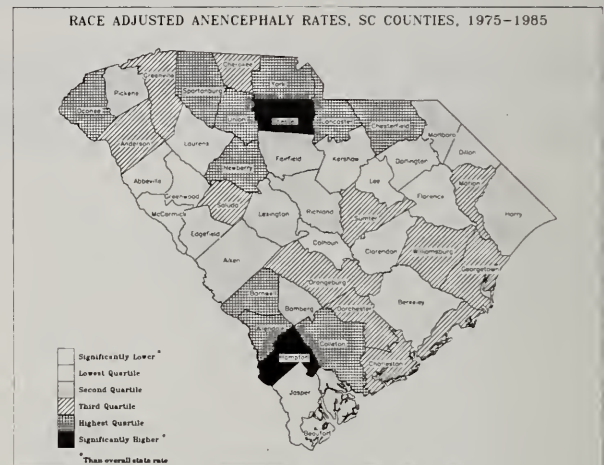


FIGURE 1

For spina bifida, the race-adjusted rates ranged from zero in seven counties to 16.2 per 10,000 in Barnwell. Significantly higher rates of spina bifida were found in the counties of Anderson and Barnwell. A rate significantly lower than the state rate was observed for Charleston County. Figure 2 shows that the geographic patterns of spina bifida were somewhat similar to those observed for anencephaly with higher rates observed in the north-central counties. Higher rates of spina bi-

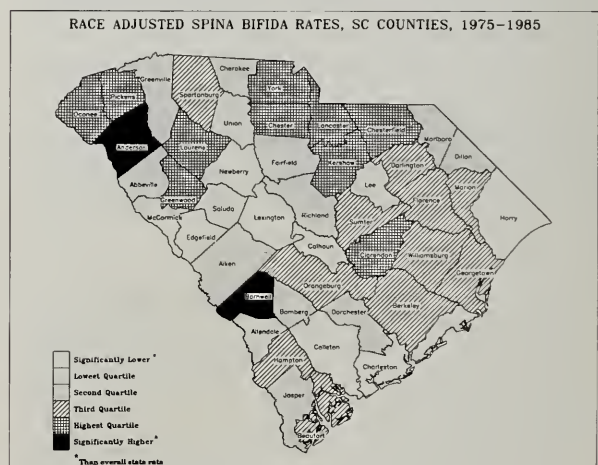


FIGURE 2

NEURAL TUBE DEFECTS

Table 1: Indirectly Race-adjusted Rates* Among Live Births and Fetal Deaths by Mother's County of Residence, SC, 1975-1985

COUNTY	ANENCEPHALY				SPINA BIFIDA			
	N	Rate	95% C.I.		N	Rate	95% C.I.	
			Lower	Upper			Lower	Upper
State	251	4.5			227	4.1		
Abbeville	0	0.0	0.0	10.3	1	2.8	0.3	15.5
Aiken	7	3.6	1.4	7.3	6	3.1	1.1	6.8
Allendale	2	11.3	1.1	40.6	0	0.0	0.0	18.0
Anderson	12	5.3	2.7	9.3	17	7.9†	4.6	12.6
Bamberg	1	3.7	0.4	20.6	1	3.3	0.3	18.7
Barnwell	3	8.5	1.7	24.8	6	16.2†	5.9	35.3
Beaufort	5	3.4	1.1	7.9	7	4.7	1.9	9.8
Berkeley	6	2.7	1.0	6.0	10	4.7	2.2	8.6
Calhoun	0	0.0	0.0	19.5	0	0.0	0.0	17.7
Charleston	25	4.5	2.9	6.7	10	1.8†	0.8	3.3
Cherokee	4	5.6	1.4	14.2	2	2.9	0.3	10.3
Chester	7	12.9†	5.1	26.5	5	8.8	2.8	20.7
Chesterfield	5	7.8	2.5	18.3	4	6.2	1.5	15.7
Clarendon	1	2.3	0.2	12.8	3	6.2	1.2	18.2
Colleton	4	7.7	1.9	19.6	0	0.0	0.0	6.7
Darlington	3	3.0	0.6	8.9	4	3.9	1.0	9.9
Dillon	2	3.4	0.3	12.2	2	3.2	0.3	11.5
Dorchester	7	5.7	2.3	11.7	4	3.4	0.8	8.6
Edgefield	1	3.6	0.4	20.2	0	0.0	0.0	12.3
Fairfield	1	3.2	0.3	18.2	1	2.9	0.3	16.1
Florence	4	2.0	0.5	5.2	11	5.4	2.6	9.7
Georgetown	3	3.9	0.8	11.4	3	3.6	0.7	10.7
Greenville	26	5.0	3.3	7.4	14	2.9	1.6	4.8
Greenwood	1	1.1	0.1	6.2	6	6.6	2.4	14.3
Hampton	5	15.5†	4.9	36.2	2	5.6	0.6	20.0
Horry	7	3.3	1.3	6.7	5	2.4	0.8	5.6
Jasper	0	0.0	0.0	13.7	1	3.4	0.3	18.9
Kershaw	2	2.9	0.3	10.5	4	5.8	1.5	14.9
Lancaster	8	9.2	3.9	18.1	6	7.0	2.6	15.3
Laurens	0	0.0†	0.0	4.4	7	8.4	3.3	17.2
Lee	0	0.0	0.0	12.8	0	0.0	0.0	11.2
Lexington	9	3.5	1.6	6.6	6	2.5	0.9	5.5
McCormick	0	0.0	0.0	29.7	0	0.0	0.0	26.0
Marion	3	5.1	1.0	15.0	3	4.7	0.9	13.7
Marlboro	2	3.7	0.4	13.3	2	3.4	0.3	12.4
Newberry	3	6.0	1.2	17.7	1	2.0	0.2	11.1
Oconee	7	7.7	3.1	15.9	6	7.2	2.6	15.8
Orangeburg	7	5.3	2.1	10.9	6	4.1	1.5	9.0
Pickens	5	3.8	1.2	8.9	7	5.8	2.3	12.0
Richland	14	3.3	1.8	5.6	13	3.0	1.6	5.1
Saluda	1	3.9	0.4	21.6	0	0.0	0.0	13.8
Spartanburg	21	6.0	3.7	9.1	15	4.4	2.5	7.3
Sumter	8	4.4	1.9	8.7	10	5.3	2.5	9.8
Union	3	6.2	1.2	18.2	1	2.1	0.2	11.6
Williamsburg	3	4.7	0.9	13.8	3	4.1	0.8	12.1
York	13	6.9	3.6	11.8	11	6.0	2.9	10.7

* Race-adjusted rates per 10,000 live births plus fetal deaths, indirect method using disease specific rate for South Carolina.

† p<.05

fida were also observed in the western region of the state.

DISCUSSION

Windham examined current trends in the incidence of NTDs in the United States in the last decade using data from different sources.⁶ Overall rates in the United States from one of these sources, the National Center for Health Statistics (NCHS), ranged from 4.9 to 5.9 per 10,000 live births in the years 1973 to 1978. These rates are, however, somewhat lower than the overall rate (8.5) observed in South Carolina because fetal deaths are not included in the NCHS data. In a second source, the Birth Defects Monitoring Program (BDMP) rates ranged from 7.4 to 13.3 per 10,000 and were generally consistent with the rate observed in this study. The BDMP data were derived from discharge diagnoses on approximately one-third of all newborns in the United States and includes both live births and fetal deaths in the calculations. Windham's analysis showed a decreasing trend in NTD rates from all of the reporting systems; this decrease was noted in all variables examined (i.e., race, sex, and birth status) for both anencephaly and spina bifida. Consistent with the decline in rates for the United States as a whole, the overall rate of anencephaly and spina bifida in South Carolina also declined between the two time periods examined, especially among nonwhite births. This decline may be due to better prenatal counselling, diagnosis and care or improvement in causative environmental factors.

The race-adjusted rates for both malformations showed wide variability for the 46 counties in the state. Counties in the north-central region with higher rates of anencephaly also tended to have higher rates of spina bifida. Both anencephaly and spina bifida have also been shown in other studies to have similar epidemiologic patterns of variation, suggesting that the two are etiologically related.⁷

County-specific areas of high incidence may be the best recipients of scarce resources for the provision of maternal screening programs and perinatal services. In addition, when data become available, correlation studies using environmental and demographic variables from areas of the state with the higher rates of NTDs may suggest important new etiologies. □

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HYPOCHONDRIASIS: DOES IT EXIST IN MEDICAL PRACTICE?*

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Hypochondriasis was originally described by the ancient Greeks in 350 B.C. Since that time the term has been generally accepted in medical practice and a variation, *hypochondriac*, has even been commonly incorporated into routine conversational parlance.

But does hypochondriasis continue to exist today in medical practice, or is it merely an antiquated term with meaning limited to historical study? Since first explicitly employed by Galen of Pergamon in the second century A.D.,¹ the term has undergone gradual changes, yet continues to maintain at least a semblance of its original connotation. Therefore, an examination to determine the current existence of hypochondriasis as a diagnosable and treatable disease entity, as well as a study to understand the implicit associations connected with the term, requires a review of the existing literature that begins with a brief historical summary.

HISTORICAL OVERVIEW

Galen, influenced by Greek humoral theories, viewed hypochondriasis as a special form of melancholia.¹ The latter condition was thought to be due to an excess of "black bile," a substance secreted by the spleen. In hypochondriasis, the effect of this bile was thought to be directed primarily to the stomach, the organ anatomically positioned under the cartilages of the lower ribs, hence the name *hypochondriasis* (Greek: hypo = "under," chondros = "cartilage"). Therefore, hypochondriasis was considered to be an abdominal form of melancholy, characterized by abdominal pains, sour eructations, and flatulence, along with the mental symptoms of fear and sadness.¹

In the seventeenth and eighteenth centuries, hypochondriasis attained the status of an indepen-

dent disease entity, replacing melancholy as the diagnosis most frequently utilized to refer to a wide variety of poorly understood symptoms. *Spleen* in men, *vapours* in women, and simply *hyp* were contemporary synonyms. The condition came to be viewed as a disease of civilization, of the more affluent strata of society, and it became fashionable to visit health spas to treat the disease.² Hypochondriasis was particularly common in England, perhaps because wealth was somewhat more widely distributed in that country; hence, another synonym, the *English malady*.

Explanations regarding the pathogenesis of hypochondriasis could be summarized as either organic or psychogenic. Organic theories were based on the humoral concepts of ancient Greece and Galen's theories of natural, vital, and animal spirits.³ Explanations included lack of tonus in the stomach, stasis of blood thickened by black bile in the abdominal organs, and disturbed intestinal peristalsis. Teophile Bonet of Genoa in 1679 theorized that hypochondriasis was a disturbance in the animal spirits from the brain, causing dysphoria and pathological changes in internal organs.⁴ Thus, hypochondriasis was considered by proponents of organic theory as a physical disease with symptoms and pathological changes, particularly in the abdominal organs. Some conditions which then were diagnosed as hypochondriasis probably would now be diagnosed as peptic ulcer, colitis, pancreatitis, biliary colic, and porphyria.⁵

Psychological views of hypochondriasis were also reported. For example, Robert Burton in 1621 viewed hypochondriasis as a special form of melancholy and attributed the disorder to frustrated ambitions, disappointment in love, and loneliness.⁴ However, Thomas Sydenham probably was the first physician to de-emphasize organicity in the etiology of hypochondriasis. In a letter written in 1682 he attributed hypochondriasis to disturbances in the animal spirits caused by emotion, grief, or boredom.¹

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During this time psychological theories had also been forwarded for hysteria and the psychogenic view of hypochondriasis now resulted in the two diseases becoming difficult to differentiate. Indeed, they were often considered one and the same. Women would be diagnosed as hysteric, whereas men would be labeled as hypochondriacal.

The next century brought a significant increase in the frequency of diagnosed hypochondriasis while less attention was directed to defining inclusion criteria. Thus, hypochondriasis became commonly employed as a diagnosis describing a wide variety of medical conditions and criticism of its use mounted. A thought common at that time was that the diagnosis of hypochondriasis was utilized by lazy patients as an excuse for their lack of responsibility and by incompetent physicians as a camouflage for their ignorance.¹

During the sixteenth and seventeenth centuries, a disorder characterized by fear of imagined disease, or morbid preoccupation over the possibility of having a disease, had been recognized, largely as the result of Moliere's play *Le Malade Imaginaire*.¹ This disorder was similar enough to hypochondriasis to restructure common perception of hypochondriasis as existing both as a physical disease, from organic or psychogenic causes, and as a mental condition characterized by imagined disease.

During the nineteenth century, owing to mounting criticism, hypochondriasis was abandoned as a disease concept. However, it was replaced by other all-encompassing diseases such as cerebral irritation, spinal irritation, and, more recently, neurasthenia and neurosis.¹ The term hypochondriasis was left to survive primarily in the sense of imagined disease or nosophobia.

Today there remains a great deal of confusion over the status of hypochondriasis. This confusion is apparent when one compares the three different *Diagnostic and Statistical Manuals of Mental Disorders* (DSM) published by the American Psychiatric Association. In the first manual, hypochondriasis was not included in the taxonomy of disorders. In the second manual, hypochondriasis appeared as a form of neurosis. Finally, in the most recent manual, the concept of neurosis is abandoned and hypochondriasis now appears as an independent condition under the general category of "Somatization Disorder."

DIAGNOSIS

Does hypochondriasis exist today as a diagnosable disease entity and, if so, is the disorder a primary diagnosis or a secondary part of a symptom constellation? As previously mentioned, the current use of the term hypochondriasis is in the sense of nosophobia, or preoccupation with imagined disease. The DSM-III defines hypochondriasis as follows:

1. The predominant disturbance is an unrealistic interpretation of physical signs and sensations as abnormal, leading to preoccupation with the fear or belief of having a serious disease.
2. Thorough physical evaluation does not support the diagnosis of any physical disorder that can account for the physical signs or sensations or for the individual's unrealistic interpretations of them.
3. The unrealistic fear or belief of having a disease persists despite medical reassurance and causes impairment in social or occupational functioning.
4. Not due to any other mental disorder such as Schizophrenia, Affective Disorder, or Somatization Disorder.

Hypochondriacal complaints are not restricted to psychological conditions and may occur in a number of physical and mental disorders. For example, hypochondriacal complaints may occur in a variety of organic diseases, such as organic brain syndrome, multiple sclerosis, thyroid or parathyroid disease and systemic lupus erythematosus. Ladee⁴ investigated 219 patients with hypochondriacal complaints and discovered that the complaints were caused by physical disorders in 15% of the cases. The underlying physical diagnoses included a wide range of conditions, including organic brain syndrome, multiple sclerosis, status post hepatitis, rectal cancer, chronic appendicitis, influenza, recent surgery for cardiovascular defect, megalo-esophagus, traumatic hemothorax, reserpine toxicity, and puerperium. The moral of this story is obvious: complaints of physical disease should not be disregarded and considered hypochondriacal before adequate medical evaluation has been completed.

Preoccupation with disease may also occur in psychological conditions, such as depression, generalized anxiety disorder, and panic disorder. The affective disorders are particularly noted to be

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associated with hypochondriasis. For example, Kenyon⁶ discovered that secondary hypochondriasis was associated with affective disorder in 82.4% of the cases investigated. In panic disorders, patients' complaints are also often predominantly somatic and individuals frequently visit emergency rooms believing they are suffering cardiac arrhythmia or a heart attack. Somatization disorder and psychogenic pain disorder are two additional conditions related to hypochondriasis. However, in these two conditions the preoccupation is generally more with the symptom itself, rather than with its significance in relation to an underlying disease.

Hypochondriacal concerns are not always pathological. They can occur as a natural reaction to physical symptoms, particularly if the symptoms are of recent origin. Such temporary hypochondriacal concerns typically lead to a pursuit of medical evaluation and treatment and, therefore, are considered adaptive. Hypochondriasis may be diagnosed only when a medical evaluation, in the opinion of a competent physician, has ruled out beyond a reasonable doubt an active disease process. Thus, when a patient persists with preoccupied concerns about a disease, despite a physician's reassurance, it is then that a diagnosis of hypochondriasis may be entertained. Unfortunately, the patient often does not agree with the physician's assessment, perhaps claiming that important symptoms were missed or implying that the physician was incompetent. This position typically leads to an adversary physician-patient relationship, "doctor shopping," and demands for further medical consultation. The picture may become further complicated when such medical evaluations themselves become the cause of the symptoms. For example, exploratory surgery might lead to adhesions, which might lead to an intensification of symptoms, more hypochondriacal worries, and a greater conviction of having an organic disease.

Interestingly, research indicates that "healthy" hypochondriacal concerns may be triggered by an intensive study of disease. It would appear that bodily sensations that have previously been accepted as "normal" might be reassessed as to their possible significance in regard to the particular disease being studied. Not surprisingly, temporary hypochondriacal concerns are common in medical students. For example, one study discovered that 79% of medical students have a

positive history of hypochondriacal concerns which usually terminated within a matter of weeks after consultation with a physician or on further intensive study of the disease.⁷ A similar study⁸ indicated that more than 70% of medical students suffered from hypochondriacal concerns at some point during their career, although only three of the 77 subjects were diagnosed as actually suffering hypochondriasis.

Research suggests that hypochondriacal complaints may be present in a large number of psychiatric conditions which, according to the DSM-III, all take priority over hypochondriasis when establishing a diagnosis. The question that then arises is whether there exists a syndrome of primary hypochondriasis, or whether hypochondriasis is always a secondary component of another condition. Unfortunately, there exists a scarcity of systematic research in this area, and confusion results from differences in the overall diagnostic framework employed in different studies and from differences in the definition of hypochondriasis itself. For example, some studies have included patients with complaints of excessive symptom magnification which now, according to the DSM-III, would be diagnosed as psychogenic pain disorder or psychosomatic disorder. Also, the prevalence of hypochondriasis might depend on the population studied. For example, one would expect a low prevalence of primary hypochondriasis in psychiatric samples simply because of the high number of other psychiatric disorders taking priority in assigning diagnoses.

Kenyon⁶ reported the retrospective results of a psychiatric population treated over a 10-year period and identified 512 individuals in which hypochondriasis was mentioned as a diagnosis. In 301 cases, the diagnosis of hypochondriasis was primary, and in 211 cases it was considered to be secondary. Further study indicated similarity in patients with primary and secondary hypochondriasis in the majority of variables investigated. For example, the age distribution showed a peak incidence of 30-39 years for men and 40-49 years for women in both groups. There was a predominance of middle socioeconomic classes in both groups and the anatomical location of complaints was most frequently in the head, neck, abdomen, and chest for both groups. Because of these similarities, the author concluded that the two conditions must be one and the same syndrome, and that hypochondriasis is always a secondary com-

ponent of a primary diagnosis.

Pilowsky⁹ also investigated this question by performing both a psychiatric and physical examination on 147 patients with hypochondriacal complaints and classifying the individuals into primary or secondary hypochondriasis. Eighty-one of the 147 patients were classified as suffering secondary hypochondriasis, which was defined as the presence of anxiety or depression of greater than a mild degree.

Results of this study indicated that patients with primary hypochondriasis tended to have longer disease histories before referral for psychiatric treatment. Complaints involving the musculoskeletal system and complaints involving skin care or appearance were more common in primary hypochondriasis. Depersonalization, poor male sexual adjustment, and apprehensions of future disease were more common in secondary hypochondriasis. Thus, it was concluded that there is indeed a syndrome of primary hypochondriasis and that primary and secondary hypochondriasis differed on variables other than the defining characteristics.

HYPOCHONDRIASIS IN MEDICAL SETTINGS

Since hypochondriasis involves concern about physical disease, it is reasonable to assume that physicians in busy medical practice would be quite familiar with the syndrome. However, there is evidence to suggest that medical practitioners, in general, are not particularly concerned about subtleties of psychiatric diagnosis. Therefore, they do not generally differentiate between the different somatoform disorders, psychophysiological disorders, or other mental disorders with associated hypochondriacal complaints. Nevertheless, a distinct type of patient has been identified who may be characterized by repeated visits to physicians and complaints of physical symptoms for which no adequate physical etiology may be identified. These patients are frequently referred to with names that reflect the adversary relationship that often emerges between physician and patient: the familiar face,¹⁰ rotating patient,¹¹ complaining or hateful patient¹² or simply, crock.¹³

Recently, special clinics have been developed in a number of medical centers that exclusively devote themselves to the study and treatment of hypochondriacal patients. However, there appears to be no significant research reporting

clinical efficacy as of yet. One study¹⁰ does describe these patients as predominantly female, with close family support and diverse complaints of physical symptoms. They are described as exceptionally "surgery-prone," with gynecological surgeries being particularly common. Other common presenting complaints include headache, insomnia, general malaise, joint pain, and back pain. Typically, the symptoms do not respond to treatment or are substituted by other symptoms. However, despite this chronic course, the patient does not appear to be particularly anxious or depressed. From this description, it appears that these patients would be diagnosed primarily as having somatization disorders rather than hypochondriasis.

Lipsitt¹¹ confirmed that the majority of "rotating" patients studied were women over the age of 58 years with complaints refractory to treatment. Presenting complaints included general fatigue, diffuse headache, or generalized pain. In all cases, an underlying depression was postulated and the type of depression included masochistic, agitated, or chronic.

In summary, the question remains, "does hypochondriasis exist in medical practice?" The data-based answer, unfortunately, appears inconclusive. Studies of hypochondriasis in medical settings have been neither systematic nor frequent, perhaps because these patients tend not to be interesting to busy medical practitioners, both because of their lack of "real" disease and because of the adversary relationship that these patients often establish with their doctors. However, it would empirically appear that hypochondriasis continues to frequently exist in some fashion in contemporary medical practice. Perhaps current uncertainty results more from confusion over ever-changing psychiatric terminology and fashion-motivated diagnostic classifications than from some mystical quality of hypochondriasis to periodically visit physicians' offices. Like the bold youth in *The Emperor's New Clothes*, we should refuse to be swayed by those intent upon rejecting obvious reality.

SUMMARY

Hypochondriasis was originally described by the ancient Greeks in 350 B.C. and, since that time, has influenced the practice of medicine. Currently, hypochondriacal patients are generally characterized by repeated visits to physicians,

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"doctor shopping," and complaints of physical symptoms for which no adequate etiology may be determined. In fact, these patients are frequently referred to with names that reflect the adversarial relationship that often emerges between physician and patients: the familiar face, rotating patient, hateful patient, or simply, "crock."

Does hypochondriasis continue to exist in medical practice, or is it merely an antiquated term with meaning limited to historical study? □

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RELATIONSHIP OF EXERCISE TO SEMEN PARAMETERS AND FERTILITY SUCCESS OF ARTIFICIAL INSEMINATION DONORS*

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Since intense athletic activity in women can affect their reproductive function, we hypothesized that a similar relationship may occur in men. Because the pituitary-adrenal-testicular axis is known to react to physical exercise and 40% of infertility is related to male factor, any information on the interaction between strenuous exercise and reproductive function could be clinically useful to physicians treating male patients. Numerous studies have evaluated the effects of exercise on serum hormonal concentrations, but few have attempted to correlate these changes with various characteristics of semen. In order to test for an effect of exercise on the reproductive function in men, we examined the relationship between vigorous sports participation, semen parameters, and resultant pregnancy rates in our donor insemination program. If exercise does have an adverse effect on male reproductive function, this effect could perhaps be modulated by a change in sports participation and not require intervention by a specialist.

MATERIALS AND METHODS

Using a questionnaire, we surveyed 69 donors in the artificial insemination program of Hershey Medical Center, Pennsylvania State University, for athletic participation, and performed a retrospective study of their semen analyses and number of pregnancies conceived during the years 1979-1983. Fifty-five of the 69 donors were medical students. The others were residents, graduate students, and physicians. The donors had no history of chronic disease, genitourinary infec-

tion, or infertility. None were taking any medications. The number of pregnancies achieved by each donor in the program was determined.

The donors were divided into groups based on sports activity and semen volume. The donors in the high activity group had participated for over one year before the study (three to four days per week in one to two-hour sessions and one-half hour per day individual conditioning) in either running, racquetball, tennis, biking, swimming, soccer or skiing. Donors in the low activity group rarely participated in sports. Donors having 1.0 cc or less of semen were placed in the low volume group; and those with 2.0 cc or more in the normal volume group. The donors in each group were similar in age, height, and weight.

Semen samples were obtained by masturbation after two days of abstinence and at least 12 hours after sports participation, if the donor were active in sports. Specimens were analyzed within 60 minutes of their collection. Semen analysis was performed according to standard procedures recommended by the World Health Organization.¹ Volume was measured to the nearest tenth of a milliliter in a calibrated chamber; motility was assessed under low power to scan representative areas; then motion in 25 high-power fields was determined. A total motility score (%) represented means of active cells over all fields. The Papanicolaou's stain was used for the determination of morphology.¹

Frequency tables were constructed to evaluate the data with calculation of mean and standard deviation. The hypothesis "Does increased athletic activity result in decreased fertility in men" was evaluated using the one-tail Fisher's Exact Test. The next step in the analysis was to evaluate whether or not the amount of activity had any impact on semen parameters. Analysis of variance

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SEMEN PARAMETERS

was used to evaluate each of these sperm quality parameters.

RESULTS

Of the 69 subjects, 21 were considered to have a high level of athletic activity versus 48 in the control (low activity) group. Two donors contributed four specimens each to the analysis; however, the preponderance of people provided only two specimens.

The hypothesis, "Does increased athletic activity result in a decrease in fertility," was next evaluated. A frequency table summarizing this information (broken down into two columns, one indicating a high level of athletic activity and the other a low level of activity) is shown in Table 1.

TABLE 1

Pregnancy Occurrence as Related to Sports Activity by Men in a Donor Insemination Program

Pregnancy	Activity		Total
	High	Low	
0	19 27.54%	39 56.52%	58 84.06%
1	2 2.90%	9 13.04%	11 15.94%
Total	21 30.43%	48 69.57%	69 100.00%

In the high activity group, there were only two pregnancies out of 21 or 9.52%. This is compared to nine pregnancies from 48 donors in the low activity group or 18.75%. The analysis of these data, carried out using the one-tail Fisher's Exact Test yielded a *p* value of 0.28. Consequently, an increase in athletic activity in this study did not seem to decrease pregnancy rates since the data do not reach statistical significance. (Figure 1)

The next step of the analysis involved the effect of sports activity on the parameters of semen quality. Analysis of variance was carried out for each parameter. The first parameter to be evaluated was that of physical activity and its effect on total semen volume. A significant decrease in volume was noted (*p*=0.0042). The next factor was that of motility. High sports activity appeared to be associated with a decrease in motility (*p*=0.09). The last variable analyzed was the

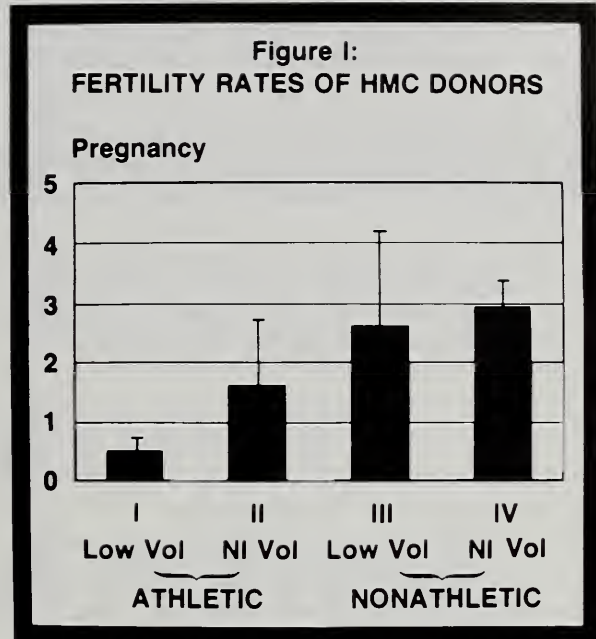


FIGURE 1. Fertility rates of athletic and nonathletic donors as a function of semen volume.

finding of high sperm counts in donors with high levels of physical activity; this was found to be statistically significant (*p*=0.04).

There exists the possibility of a significant amount of co-variance among these variables and the potential effect of different levels of activity on an aggregate of these measures. A principal component analysis showed a significant degree of association and high co-variance among the parameters evaluated.

Other laboratory parameters of semen (morphology, pH, viscosity) did not appear to be affected by strenuous exercise.

DISCUSSION

Ten to 12 percent of married couples in the United States are infertile, and, of these, 40% may be attributed to a male factor. Because of the known impact of exercise on reproductive function in women, a systematic evaluation to delineate the possible role of exercise or sports activity in men with infertility or altered semen parameters might be clinically useful. Previous studies evaluating serum hormone changes in men during exercise have produced somewhat conflicting results. Kuoppasalmi suggested that serum hormonal changes depended more on intensity of exercise than on duration.² In several studies, plasma testosterone decreased in the first few hours after intense exercise, presumably due to

decreased testicular secretion, but the exact mechanism remains unknown.^{2, 3} Bliss has shown that rats swimming for one hour demonstrate a decrease in both plasma and testicular testosterone to one-third of the control value.⁴ Other studies in humans have found increased serum testosterone concentrations after intense exercise.⁵⁻⁷ In previous studies^{5, 6} luteinizing hormone did not vary with exercise; however, Kuoppasalmi³ found increased luteinizing hormone concentrations immediately after exercise. These values returned to pre-exercise levels within three hours. Serum testosterone concentration increased simultaneously with the increase in serum luteinizing hormone concentration, but decreased 30 minutes after exercise to less than basal concentrations and did not attain pre-exercise levels for three days. Increased serum testosterone concentrations could be due to increased synthesis and/or secretion, decreased clearance, or increased adrenergic stimulation.^{2, 6} Gonadotropin-releasing hormone release may be mediated by hypothalamic catecholamine neurons which may explain, in part, the changes in luteinizing hormone concentrations observed in response to exercise.² Prolactin has also been reported to increase with exercise,⁸ as have various prostaglandins and dopamine.⁷ Perhaps these hormonal changes seen with strenuous exercise may partly account for the altered semen parameters.

Ayers et al studied 20 male marathon runners.⁹ Running mileage, body fat, testosterone, and free testosterone did not correlate with semen quality in this study. In that group, 90% of the subjects had normal semen analyses. Likewise, McConnell and Sinning found no significant changes in sperm production during exercise.¹⁰ In contrast to the literature, our study noted some definite, statistically-significant changes in semen parameters (volume, motility, and count) as a result of the amount of athletic activity. This difference may reflect the populations studied or the type and intensity of the exercise. However, the role of strenuous physical activity in altered semen parameters cannot be ignored.

The data presented in this study are suggestive of an association between high athletic activity and decreased pregnancy rates, but statistical significance is not reached. This effect on pregnancy

rates may be modulated by other factors in a particular individual and may reflect individual susceptibility, or set point, to exercise related changes in semen parameters or reproductive performance. Based on this study, exercise appears to have an impact on semen quality but no detrimental effect on pregnancy rates.

Further study is needed to either confirm or refute the suggestion that intense athletic activity could be associated with altered semen quality or serum hormonal parameters and subsequent reproductive performance, since this information may be useful clinically in evaluating male infertility.

In summary, men in our Donor Insemination Program with high sports activity had decreased semen volumes and a decrease in sperm motility but no significant decrease in pregnancy rates. □

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... I will follow that method of treatment which, according to my ability and judgement, I consider for the benefit of my patients.

Oath of Hippocrates

Acquired Immune Deficiency Syndrome (AIDS) and Human Immunodeficiency Virus (HIV) are long synonyms for a five letter word—death. Indeed this virus is bringing death at a frightening pace with over 30,000 deaths since 1981 and a projected 170,000 by 1991.¹ We are not shielded here in South Carolina for there are nearly 1,400 HIV positive residents.² The issues seem so clear: treat those who have the disease, protect those who do not, develop a vaccine and find a cure. Yet since its discovery and the subsequent heated debate as to who discovered it first and therefore had the right to name it, this disease has brought confusion and controversy. AIDS is causing this generation to reflect on issues that it has never had to before. Perhaps the necessitated reevaluation of certain moral and ethical aspects of the profession we call medicine will be the one redeeming quality of this tragic disease. Hopefully, such a re-examination will solidify our commitments, define our obligations and recall our goals.

One of the foremost issues in the minds of physicians, and certainly those infected, is the provision of care for the AIDS patient. Never in our lifetime has a disease created such fear as to result in physicians refusing to treat the ill; yet, some surveys suggest that at least 25% of young doctors would choose not to care for an AIDS victim if he had an alternative.³ It is perhaps the ultimate irony that a disease that leaves its victims feeling so abandoned and unsupported should be termed "AIDS."

*Recipient of the 1988 South Carolina Institute for Medical Education and Research (SCIMER) Scholarship Award for the best essay on a social, economic, or ethical issue related to medicine by a medical student in South Carolina. Address correspondence to Mr. Gash at 14-A Sandy Springs Court, Columbia, SC 29210.

Recently, The American Medical Association adamantly stated that it is unethical for a physician to refuse to treat an AIDS patient.⁴ However, we will not create compassionate care by obligation alone. The physician who apprehensively and grudgingly cares for his patient, whether he has AIDS or some other disease, loses one of the most important therapeutic tools: expressing one's absolute positive regard for the sick, i.e., "for the doctor himself to be the treatment."⁵ This sort of human pharmaceutical will certainly be lacking in the relationship between an AIDS patient and the doctor who unwillingly is forced to treat him.

So we must look to other sources of incentive to augment the AMA's decree. Those who look to our distant forefathers of medicine for inspiration in times of "hazard" may meet with disappointment. During the scourge of bubonic epidemic in the 1300's, "writer after writer lamented the avarice and cowardice of doctors in times of the plague."⁶ Likewise during the great plague that killed so many in London during the mid 1600's, most physicians—including Thomas Sydenham who would later go on to be a distinguished scholar of infectious diseases—deserted their city and its dying residents, coming back only when they no longer felt in danger.⁷ There were few examples of the kind of philosophic inspiration we long to hear about in our distant predecessors. A notable exception was William Boghurst, who wrote "every man that undertakes to be of a profession or takes upon him any office must take all parts of it, the good and the evil, the pleasure and the pain, the profit and the inconvenience altogether, and not pick and chuse; for ministers must preach, Captains must fight, Physicians attend upon the sick. . . ."⁸ It was not until the mid 1800's when the AMA established its first code of ethics did we begin to see the kind of widespread

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medical heroism we can look to for inspiration. Physicians, at great risk to themselves, unselfishly attended those in need throughout the cholera, influenza and polio epidemics of the era.⁹ Thus, the medical profession's past reaction to periods of potentially hazardous duty has been inconsistent and at times less than commendable.

If neither the decrees of our leaders nor our past encounters with contagions provides sufficient encouragement to create a responsible attitude toward treating AIDS patients, perhaps the facts can dispel the fears. There are seven reported incidents of health care workers seroconverting after occupational accidents, thus suggesting that there is a risk and precautions must be taken.¹⁰ However, this risk appears to be very slim as illustrated by four comprehensive prospective studies in which of over 1500 health care workers who had received HIV exposures via needlestick injuries or mucosal splashes, only three seroconversions apparently occurred.¹¹ These studies suggest that most of the fears that impede the physician-AIDS patient relationship are overestimated or unfounded. To exemplify the point, the rate of seroconversion in Hepatitis B virus (HBV) exposures is estimated to be between 6-30% as compared to the less than .2% conversion in HIV accidents.¹² It appears that the HBV concentration in the chronic carrier is much higher than the HIV concentration in AIDS patients.¹³ So, the virus seems not be so contagious, and its transmission modes are for the most part known and easily controlled. This virus is not among the hardy either, being easily destroyed with common household antiseptics.¹⁴ It is quite obvious that the exaggerated fears experienced by some physicians stem from uniformly fatal consequences. The low risk with HIV exposure should by no means loosen the precautionary measures concerning blood and body fluid contact. Every possible safety measure should be taken, but fear of accidental infection should not be to such an extreme to create unwillingness to care for the suffering patient.

Ultimately, to find the stimulus we need to compassionately treat an AIDS patient (or any other), I suggest that we need to look only as far as in the bed in front of us. The dying should always, at least in some way, touch the heart and twinge the soul. The way this deadly virus ravages its victims early, creating long suffering and despair, before ultimately killing them, should certainly

induce sympathy and caring. Recall that this virus will kill approximately 140,000 men, women and children in the next three years.

How many ears must one man have
before he can hear people cry?
yes, and how many deaths will it
take till he knows
that too many people have died?

Bob Dylan

So, because there are helpless and because only we can help, we should feel compelled and obliged to do so. Medicine, when seen in its best light, is considered the profession of helpers of the feeble. One of the most important concepts is that medicine is a profession. "A profession can be distinguished by its altruistic goals: the educating of the young, the protection of the innocent, the healing of the sick, and the comforting of the soul."¹⁵

We must have the same compassion for the AIDS patient as we do for the individual with cancer; yet there are emphatic differences. First, AIDS is contagious and uniformly fatal. Being a physician does not eliminate one's right to avoid this terminal infection. As the AMA points out, "those individuals who are not infected with the AIDS virus must have every opportunity to avoid transmission of the disease to them."¹⁶ The physician has a foremost obligation to treat the patient with AIDS, but also the right to take every possible precaution while doing so. Some specific situations require special consideration such as the uncontrolled psychotic individual with an HIV infection or the particularly susceptible physician (immunocompromised or with a skin condition). In these circumstances where the risk far outweighs the benefits, certainly referral is in order. As discussed, the risk to most physicians is very low when dealing with this virus; some will argue that any risk is too great when dealing with a disease that cannot be cured. However, medicine is still for the most part a palliative art directed at the suffering, and despite its advanced technology, a cure is still the exception to the rule. Then there are instances where a physician can justifiably deny treatment, as long as there are other physicians willing to take on the patients' care. So, what will be our generation's reaction to this disease? There will be those who will avoid any risk and refer all AIDS patients to another

THE CHALLENGE OF AIDS

physician, those who will understand the nature of the risks and treat with the same care and caution as he would any other contagion, "and finally there are those who will take up the challenge of personal risk and, putting the patient's welfare ahead of their own, will reaffirm their vow to serve their fellow man."¹⁷

So, AIDS tests our commitment. It forms a fulcrum on which one side is personal risk and on the other is patient care. The base must be placed far underneath the personal side so that the scale weighs heavily in favor of the patient. Only if the risks are so high that attempts at treatment are nearly hopeless and result in useless personal disregard should we consider our own welfare. Yet, even in these situations it is important that we never lose the feelings of care and compassion for the dying. It is these feelings that form the therapeutic foundation on which the art of medicine is firmly grounded. As the distinguished Boston physician Francis Peabody wrote, "the secret of caring for the patient is to care for the patient."¹⁸ AIDS then has challenged our medical generation to treat with caution, to find a cure, and ultimately to remember to care. □

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Editorials

OUR CHRISTMAS GIFTS TO SOUTH CAROLINA'S CHILDREN

Health education in the public schools has long been a major concern of our organization. For many years, SCMA leaders have listed this issue among their top priorities. Looking back, we can declare 1988 to have been a banner year. Looking ahead, we can expect great things in 1989 and in all the years to come.

This year's accomplishments were two. First, the SCMA worked vigorously toward the passage of the 1988 South Carolina Comprehensive Health Education Act. This key act requires that health education be included in the public school curriculum from kindergarten through the twelfth grade. Students will receive education "that is planned and carried out with the purpose of maintaining, reinforcing, or enhancing the health, health-related skills, and the health attitudes and practices of children and youth that are conducive of their good health and that promote wellness, health maintenance, and disease prevention."

During the debate over this act, one frequently heard the comment that we do not *have* an adequate curriculum for such education. Who is going to provide the content? How can it be made interesting? It was at this point that our organization made its second contribution.

Visionaries among us, inspired by the SCMA

Auxiliary, conceived the concept of the *health education van*. Discussions with the State Department of Education led to our decision to donate a van to be used for special educational sessions at our public schools. The van will contain portable exhibits dealing with five areas: (1) general biology; (2) the nervous system and alcohol and drug awareness; (3) the origin of life; (4) the digestive system and nutrition; and (5) living better through understanding. The major start-up cost for the project will be these specially-designed, modular exhibits. The Department of Education has received funding for two health educators who will travel throughout the state for special sessions with students and teachers. The van will be available after school hours for county medical societies and auxiliaries to use for health education activities in their communities.

The Health Education Van Committee is composed of members appointed by the SCMA, by the SCMA Auxiliary, by the South Carolina Institute for Medical Education and Research (SCIMER), and by the Department of Education. The van should provide tangible evidence that—yes—organized medicine *is* concerned with promoting health among all South Carolinians. The van is an ambitious project. It deserves our full support.

—CSB

MEDICAID WAIVER FOR AIDS AND ARC PATIENTS

This issue of *The Journal* contains another dividend of long-range planning by SCMA leaders: the article by Mr. Judson R. Gash on "The Challenge of AIDS." Last year, the SCIMER board determined that it would be appropriate to create a Medical Education and Research Scholarship Award for the best essay dealing with a social or ethical issue pertaining to medicine written by one of our state's medical students. Mr. Gash is the first recipient of this award.

Mr. Gash's thoughts are in line with current thinking about the physician's duty to treat HIV-infected patients.¹ Also, it has been demonstrated that physicians' attitudes toward HIV-infected patients are dependent, at least to some extent, on whether they have had experience with such patients. In a recent study, it was found that physicians with *any* experience with HIV-infected patients were less likely than those without such experience to favor the creation of specialized treatment centers and to favor mandatory testing.² But there has been an obstacle to physicians' gaining experience with HIV-infected patients: who is going to bear the cost of this medical care?

Tragically, HIV infection affects primarily young people. They are ineligible for Medicare, and often they have not established themselves in their communities sufficiently well to be able to afford private insurance. Current therapy is extremely expensive. Their resources are quickly exhausted. They run up bad debts with hospitals and laboratories. Physicians caring for such patients (irrespective of the diagnosis) often find themselves the residual creditors.

The Medicaid waiver recently granted to South Carolina is a welcome change. South Carolina is the first state in the Southeast and the fifth in the entire nation to receive such a waiver. The essential feature of the waiver is that patients no longer need be near the brink of complete impoverishment in order to receive Medicaid. Patients with severe HIV infection may have up to three times the income normally required for Supplemental Security Income (SSI). A case management system has been proposed whereby individual plans

would be designed to meet the needs of each patient in a cost-effective manner. And through the Medicaid program, South Carolina can use Federal matching dollars to pay approximately 75% of the cost of the treatment, thereby reducing the state's fiscal burden.

In addition, at some point in their disease AIDS victims become nursing home eligible based upon their medical conditions. At that point, they will be eligible for entrance into the existing community long term care program.

To qualify for the Medicaid waiver, patients must have advanced or moderately-advanced HIV disease (with one or more episodes of specifically-related conditions and with a T4 lymphocyte count less than 400 per cmm) and must fall into one of the categories of financial eligibility determined by the county Department of Social Services. Patients who are not already on Medicaid may apply through the county Department of Social Services. Patients already on Medicaid should notify the Community Long Term Care (CLTC) program.

It is projected that for fiscal year 1989, there will be nearly 1,400 AIDS and ARC patients in South Carolina who will be Medicaid-eligible under these new guidelines (that is, at 300% of SSI). This number will rise to nearly 2,400 by fiscal year 1990 and to nearly 4,000 by fiscal year 1991. These numbers—if at all accurate—hint that all of us will soon be treating such patients. That the first SCIMER student essay award should go to the author of a paper entitled "The Challenge of AIDS" somehow seems most appropriate.

—CSB

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